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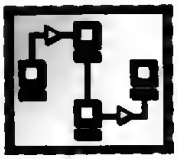
COMPUTERWORLD

Notes 4.0 to fix flaws; NT, Unix versions key

By Lynda Radosevich
NEW YORK

At a Notes symposium last week, Lotus Development Corp. detailed delivery dates — mainly in October — for the Windows NT and belated Unix versions of its Notes 3.1.5 servers.



The company also outlined a feature blueprint for Notes 4.0. Scheduled to ship in the first half of next year, it will be the first major upgrade to Notes in two years.

The 3.1.5 server platforms and 4.0 product enhancements are meant to address complaints about a complicated end-user interface, limited back-end management and scalability, restricted programmability and a need for better CC:Mail integration.

"We naively made the assumption that Notes integration with CC:Mail was easy. It's not," said Nancy McCarthy, director of technical support and operations for

Notes, *page 101*

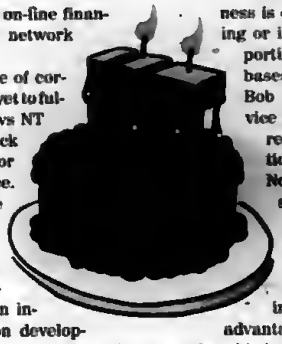
NT's first year fizzles

Users optimistic as Daytona approaches, but server apps scarce

By Stuart J. Johnston and Ed Scannell

A year after Windows NT's release, Microsoft Corp.'s preeminent 32-bit operating system has fallen far short of its prerelease hype. Even so, Microsoft's penchant for sticking with a system until it succeeds bodes well for NT's long-term prospects, analysts said.

"I see NT as having a spectacular future.... It's just a matter of time," said Colin Carpi, president of Chartwell Advisory Services in Penn Valley, Pa., which is developing a nationwide on-line financial information network based on NT.



The broad base of corporate users has yet to fully deploy Windows NT because of the lack of applications or poor performance. But many more say they are gaining confidence based on the beta of Daytona and their own internal application development projects. Daytona is the code name for Windows NT 3.5, a sleeker, faster, more network-capable version of NT due out next month.

"Virtually every company we deal with in the insurance business is either done porting or in the process of porting their databases onto NT," said Bob Quick, assistant vice president and director of information technologies at Northern Life Insurance Co. in Seattle.

The simplicity of setting up and maintaining NT gives it a big advantage over Unix systems, he added.

Although Microsoft refused to disclose sales figures, NT may have sold nearly 600,000 units in its first year, estimated Michael

NT's first year, *page 14*

Adaptive technologies

Computing for all

By Julia King

Thousands of blind and visually impaired computing professionals and their companies are caught in a costly and seemingly futile exercise in high-tech catch-up.

Bell Atlantic's Dave Simpson *waits months for updates*

On one side of this scenario are commercial software giants such as Microsoft Corp., whose steady flow of graphical applications and Windows operating system enhancements do not include standard hooks for tying into software for braille, speech output and other adaptive systems.

That leaves blind users such as Dave Simpson waiting months, even years, for access to widely used Windows-based business packages. And each time a new version is released, Simpson must wait again for updated adaptive software.

"Just when something comes out for us that should work with Windows, there's always something new. Now, for instance, it's the Chicago version of Windows," said Simpson, a database administrator at Bell Atlantic Corp. in Philadelphia.

Adaptive systems, *page 24*

Reorganizing IBM

IBM recasts server lines

By Jean S. Bozman and Michael Fitzgerald

As IBM continued to hack away last week at its corporate structure, information systems managers gave the effort lukewarm approval, saying they are far from optimistic about seeing any cost benefits soon.

"It remains to be seen whether they will pass those cost savings [from unified development] on to the customer," said Roy Dodd, MIS director at The Good Guys, Inc., a Brisbane, Calif., electronics retail chain.

Common sense

IBM announced it will try to cut costs and speed development of its disparate server lines by building them out of common hardware components, including common microprocessors, memory units and subsystems.

Connecticut Mutual's Jan Scites *hopes IBM's moves will aid its client/server efforts*

IBM will use PowerPC chips to power AS/400, RS/6000 and PC servers and will use the same chip fabrication processes to make PowerPC and mainframe CMOS chips. Such an approach could give the company a cost advantage in servers because it will be able to design a system once and then reuse it in all server brands. In many cases, brand-specific components developed in the past will be discarded.

"Initially, I'd say this was positive," said Jan Scites, president of customer services at Connecticut Mutual Life Insurance Co. in Hartford, Conn. "I think it'll make them better at getting into the client/server world, but we'll have to see how it plays out."

IBM, *page 101*

Residual values dwindling away

By Craig Stedman

IBM's transition to its latest mainframe technology may just give big iron the same throwaway status as the PCs that have sprouted up all around it.

While mainframes are struggling to shuck their dinosaur status, residual values may never get the chance. The declining prices and shortened product life cycles, which will come with the move to CMOS-based System/390s in the next few years, are expected to push the whole idea of leftover mainframe value to the back of customers' minds, users and analysts agreed.

"I think most [mainframes] will be bought and used until they wear out, like PCs and peripherals and other things," said Larry Duntz, assistant manager of computer services at Beech Aircraft Corp. in Wichita, Kan. "Residual value will be very little in the equation."

Residual values, *page 28*

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What's Inside

August 8, 1994

With programming skills in short supply at home, U.S. corporations are teaming up with overseas partners to meet the demand for new business applications

In Depth

Many U.S. companies report that not only can they find crucial programming skills in foreign nations, but they can often save 50% to 60% over what they would pay for labor costs in the U.S. And new technologies make it easier to manage offshore programming. **Page 73.**

NEWS

■ Users remain skeptical that vendors will deliver promised scalable, fully **distributed network management** systems by year's end. *Page 4*

■ **Banyan** throws its hat into the enterprise network systems management ring. *Page 4*

■ **Privacy advocates** and a federal commission renew the feisty battle over a national identification system. *Page 6*

■ A glitch strikes **Compaq**'s new high-end notebooks, which are barely shipping in volume. *Page 6*

■ A recent set of benchmark results sparks debate among users about the applicability of **benchmarks** as a whole. *Page 8*

■ **Distributed Computing Environment** has remained little more than a promise of cross-platform development for some time, partly due to the complexity of creating DCE-compliant applications. New tools may help DCE fulfill its promise. *Page 10*

■ IBM will launch a new consulting practice, leveraging its own internal experience over the past 18 months to reconstruct its sales and support staff along a "**mobile**" model. *Page 12*

■ With an eye on greater **Windows support**, Apple once again demonstrated an add-in 486 board. *Page 15*

■ While users are turning to **Ethernet switching** to meet today's network bandwidth needs, they are demanding that hub vendors provide clear upgrade paths to higher-speed technology. *Page 28*

■ Financially strapped **KnowledgeWare** seeks rescue from Sterling Software. *Page 32*

DESKTOP COMPUTING

■ Vendors address an epidemic of "**featuritis**" with new help features. *Page 39*

WORKGROUP COMPUTING

■ **Closer Look:** While most large companies are at least piloting Notes, an increasing number are turning to **groupware** alternatives that are cheaper and better-suited for areas that Notes does not address, such as real-time electronic meetings. *Page 45*

ENTERPRISE NETWORKING

■ IBM and HP butt heads in the SNA management arena. *Page 55*

LARGE SYSTEMS

■ As HP overhauls its order-fulfillment system, it has ironically found a successful niche selling proprietary HP 3000s to mail-order vendors for order-fulfillment applications. *Page 59*

APPLICATION DEVELOPMENT

■ **Rapid application development** tools from a little-known vendor provide big benefits for two St. Louis users. *Page 65*

MANAGEMENT

■ Omicron and DuWayne Petersen plan to benchmark the **efficiency** of IS personnel. *Page 70*

■ Britain's **Royal Automobile Club** improves roadside service with CD-ROMs. *Page 72*

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■ Establishing strict guidelines will eliminate unnecessary maintenance when users develop their own **Notes** applications. *Page 82*

MARKETPLACE

■ **Mail order** has its advantages for corporate buyers, but traditional channels remain the most practical. *Page 90*

COMMENTARY

■ **Charles Babcock** says users shouldn't be deceived by the appearance of peace in the world of object standards. *Page 6*

■ **Michael B. Cohn** says it's time to put the old-timers out to pasture, unless the unthinkable happens. *Page 35*

■ **John Gantz** advises users to keep OS/2 as a functional alternative to Microsoft's products. *Page 35*

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Executive Briefing

Is technology in sync with business goals? Two companies — Citizens Gas & Coke and U.S. Bancorp — have found their own ways to align IS with business. At Citizens Gas, IS and business managers vote on IS plans as part of the company's unusual budget process. U.S. Bancorp relies on financial managers who act as IS advisers to user departments. *Page 68*

On its first birthday, Microsoft's Windows NT hasn't met the goals of its prerelease hype. Even so, users and analysts say Microsoft's persistence is a good sign for NT's long-term success. Complaints with NT include a lack of applications and poor performance, but many users say they are now gaining confidence based on the state of the Daytona beta and their own internal application development projects. *Page 1*

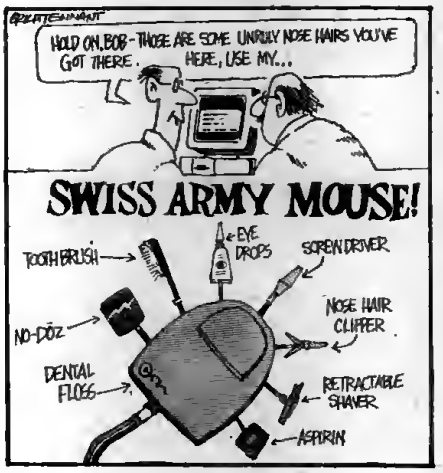
Rapid advances in graphical information technology are killing the careers of visually impaired computing professionals. What's needed, they say, is a set of standard software interfaces between corporate applications and adaptive technologies. *Page 1*

Remember the lighthearted analogies between safe sex and safe computing when computer viruses became a threat? A new virus transmitted through an Internet bulletin board has now bridged the gap between sex and electronic viruses. *Page 20*

Federal IS managers, who often find themselves under a cloud when projects go awry at taxpayers' expense, had their day in the sun last week when the General Services Administration handed out its awards for best practices in information resource management. *Page 16.* Meanwhile, a Notes-based system at the GSA holds promise of its own. *Page 46*

In an effort to retain its position as one of the world's largest freight container carriers, Sea-Land Service is readying the worldwide rollout of a terminal automation system that has already reduced costs and dramatically streamlined operations at its Port of Charleston, S.C., facility. *Page 39*

The 5th Wave *by* Rich Tennant



Why Sonic The Hedgehog™ Moves So Fast.

"Thanks to CA-Warehouse Boss, our warehouse was able to ship more games in September, '93 than we did in the past two years," says Bill Downs, Director of MIS for SEGA of America, Inc., the makers of the world's fastest moving video games like Sonic The Hedgehog.

CA-Warehouse Boss is totally integrated warehouse management software for the AS/400. It acts as "the central nerve center" that tracks every detail from arrival through departure.

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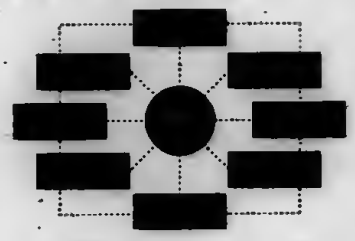
And because CA-Warehouse Boss is built using an advanced architecture, it can grow with any operation without costly custom programming.



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Banyan readies Demarc

By Elisabeth Horwitt

Banyan Systems, Inc. last week threw its hat into the network systems management ring, promising to leverage its StreetTalk global directory to manage multivendor clients, servers and services across the enterprise.

Slated to roll out in the first half of next year, Banyan's Distributed Enterprise Management Architecture (Demarc) will initially manage Banyan's Vines network operating system and Enterprise Network Services family.

Based on Hewlett-Packard Co.'s OpenView, Demarc will perform such management functions as capacity planning and performance tuning, automated recovery and management of mobile PCs, company spokesman Bill Johnson said. Banyan will also provide agents for monitoring network devices via Simple Network Management Protocol (SNMP) Version 2 and the Desktop Management Interface, he added.

In the next six to nine months, Banyan will provide Demarc applications for managing Unix and Microsoft Corp. Windows NT systems. Eventually, Demarc will manage leading third-party messaging and directory services, Johnson said.

Banyan's trump card with the above strategy is the use of its StreetTalk global directory as a built-in network management data collection tool, said Rick Villars, an analyst at International Data Corp. in Framingham, Mass.

"Unlike your typical SNMP environment, where the system is generating all this polling traffic and saturating the network, [Demarc] will use information that is inherent in StreetTalk and Vines itself to tell you the status of devices across the enterprise," said Ted Kull, project manager of systems engineering at Educational Testing Service in Princeton, N.J.

Big hit with users

Banyan also scored with users by promising to link Demarc applications and data to HP's OpenView, IBM's NetView/6000 and Sun Microsystems, Inc.'s SunNet Manager. This is a likely scenario for Pacific Gas & Electric Co., which uses all three platforms, said Herb Patten, a senior network specialist at the San Francisco-based utility.

Patten was interested but skeptical about Banyan's promise to manage non-Vines platforms and services via Demarc. "We're still waiting to see Banyan uncouple other Enterprise Network Services, like directory and messaging, and deliver them separately on Unix platforms," he explained.

Also last week, Banyan shipped a Windows-based system for administering StreetTalk, priced at $995 per server.

Squirrel crashes stock market

By Thomas Hoffman

Just when the NASDAQ exchange thought its mid-July electronic snafus were over, a fly got into the ointment — or more precisely, a squirrel.

With its third electronic glitch in the past month, the exchange that prides itself on its technological superiority as "the stock market for the next 100 years" has one serious image problem.

On Aug. 1, NASDAQ trading was interrupted for 34 minutes after a squirrel chewed through an electric company's power line and the stock exchange's backup power system in Trumbull, Conn., failed to kick in.

The failure was caused by the inability of a circuit board in the company's Trumbull-based uninterruptible power supply system to convert the network to battery power, said Richard Justice, executive vice president and chief technology officer at NASDAQ.

On July 14, NASDAQ experienced occasional outages after the exchange attempted to upgrade some communications software. The next day, NASDAQ opened 2½ hours late after an Amperif disk drive failed.

The recent outages at NASDAQ come at a particularly sensitive time. The exchange is in the midst of a $175 million information systems and telecommunications overhaul that is expected to take place during the next three to five years.

NASDAQ users have complained about the vulnerability of the single-carrier MCI Communications Corp. network that links traders with the exchange and has experienced sporadic outages.

Furthermore, NASDAQ is still a year away from providing customers with a Unix interface. Most Wall Street trading floors are run on Sun Microsystems, Inc. Unix hardware and software.

Once the systems are in place, the exchange expects to increase its capacity to 900 million shares per day — double the existing shares-per-day limit.

Firms that deal regularly with NASDAQ seem willing to overlook the malfunctions. "Every major trading facility — whether it's the New York Stock Exchange, NASDAQ or the Chicago [Mercantile Exchange] — has problems, and you hope that they deal with it as quickly as possible," said Len Hefter, head of NASDAQ trading at Jefferies & Co. in Dallas. "This thing with the squirrel — how do you protect against that?"

Ahh, nuts!

This is the second time NASDAQ has run afoul of our furry friends. In 1987, a squirrel also crashed the system at the Trumbull, Conn., data center.

Network management

Skeptical users await distributed platforms

By Steve Moore

A shake-up is coming in the hotly contested network management systems market, as leading vendors vie to rally third-party applications around their upcoming next-generation distributed platforms.

SunSoft, Inc.'s SunNet Manager holds a narrow lead over Hewlett-Packard Co.'s OpenView. But analysts and users say that lead may evaporate after new versions of OpenView and IBM's NetView/6000 debut later this year in lockstep with Encompass, SunSoft's forthcoming distributed network management system.

"The [network management platform] vendors all generate a lot of smoke and not much fire," said Randy Smith, an information systems project manager at United Parcel Service, Inc. in Mahwah, N.J. "We'll be watching with great interest as they roll out their new products, but I suspect they're not going to get it right by the end of this year."

Networking nuances

HIGH-END MANAGEMENT MARKET*

1993 worldwide units shipped: 15,715

Company/product	Shipments
Sun Microsystems/ SunNet Manager	21%
Hewlett-Packard/ OpenView	25.1%
NetLabs/DiMons	9.5%
Cabletron/Spectrum	8.6%
IBM/NetView/6000	5%
Other	20.7%

*Based on a 32-bit operating system

Source: International Data Corp., Framingham, Mass.

At long last

If vendors deliver what they promise, users will finally have network management functions fully distributed across multivendor computing environments.

"I really would like a universal paradigm for all this monitoring across the communications, the databases and the systems with a common set of tools and agents," said Mike Prince, MIS director at Burlington Coat Factory Warehouse Corp. in Lebanon, N.H.

If those promises fall flat, users fear they will sink deeper in a morass of increasingly complex, costly and noninteroperable network management systems.

Smith said vendors must widen their reach across management platforms and manage a broader set of devices. "I suspect we'll never settle on one network management platform," he said. The real trick "is to get the two or three you've got to integrate both among themselves and with element managers below them. They should all snap into each other."

SunSoft's key challenge in warding off encroaching competitors will be to "make it easier for current SunNet Manager users to go to [Encompass] than to another vendor's platform," said Jim Moorhouse, manager of applied network research at Motorola, Inc. and a SunNet Manager user.

Rapid availability of third-party applications will be crucial in easing users' migration paths, analysts said.

"SunSoft is being left in the dust in terms of capturing mind share for API and third-party application development," said John Morency, principal consultant at Strategic Networks Consulting, Inc. in Rockland, Mass.

While vendors of third-party applications that already run under SunNet Manager are loyal to SunSoft, Passmore said, independent software vendors in key application areas such as hub and router management, help desk support and trouble ticketing are focusing first on HP and IBM, with SunSoft ranking third.

A SunSoft spokesman disagreed, saying SunNet Manager will attract independent software vendors because it offers them the largest installed base.

Yet Morency noted that IBM and HP have aggressive independent software vendor programs and are driving the activity of the Management Integration Consortium, a vendor group promoting integration of network management systems.

"We originally picked SunNet Manager because at the time, it had the largest number of third-party applications available for it," Moorhouse said. HP and IBM have since significantly improved in that regard, he added.

Deciding factor

Scalability is another differentiator among network management systems.

"SunNet Manager is not scalable to really large enterprises with tens of thousands of nodes. Sun is no worse off there than HP or IBM right now, but they've got a lot riding on Encompass," said Dave Passmore, principal consultant at Decisis, Inc. in Herndon, Va.

While SunNet Manager is well-suited to manage a large domain of Sun equipment within an enterprise, "I can't see extending it as a manager of managers" across a highly diverse set of vendor-specific subnetworks, Smith said.

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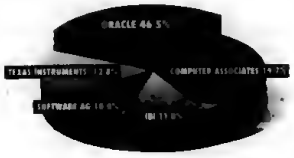

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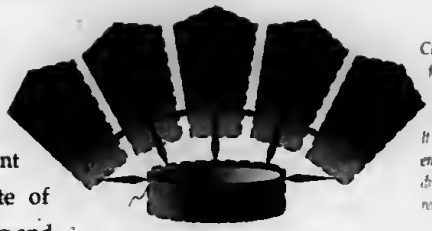

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Object users: Beware of fork in road

At Object World in San Francisco, an illusive peace seemed to break out on the object front as everybody claimed to be shaking hands and working with everybody else.

Recent steps toward interoperability, based mainly on the specifications set by the Common Object Request Broker Architecture (CORBA), are genuine, but they also mask the considerable distance we still have to go if objects are to serve as the basis for adaptable, cross-platform business systems. The thinking behind Object Linking and Embedding (OLE) and Apple/IBM/Novell's OpenDoc best addresses compound documents on PCs. The goal is large-scale systems representative of business processes, with Sun's Distributed Objects Everywhere having a better chance of hitting that target.

Component Integration Labs didn't hesitate to boast of OpenDoc's compatibility with Microsoft's OLE. But some observers note that OLE frequently uses an outside-in activation model, and OpenDoc uses an inside-out model.

If a user is working on a word processor document and runs across other applications available as embedded OLE objects, such as a spreadsheet or charting program, the user can click on the application of choice and activate it from the container word processor. This is an outside-in process.

The apparent peace on the object front, as seen at Object World, remains a phony peace.

Charles Babcock

On the other hand, a software developer might be working with a selection of custom controls for OLE, each represented by its own icon. As the cursor passes over each icon, the underlying object is activated, ready to execute as a macro program. These custom controls are inside-out activated objects. In other words, the presence of the cursor on the icon loads the object into the system. Clicking on the icon executes the function as if it is internal to the application, as opposed to double clicking on an object and waiting 15 or 20 seconds for it to load and become available.

OpenDoc reportedly will rely on this inside-out process. Theoretically, OLE and OpenDoc objects will work together. But it remains unclear to me and other observers whether users will have to discriminate between the two and activate them in a specified sequence when there are nested objects.

"If I were emperor for users, I would say this is a serious issue that will impact computing for the next decade," says John Landry, chief technology officer at Lotus.

Dave Seres, senior product marketing manager of OLE, says Microsoft studied user habits and concluded it would be better if users select an object, rather than activate many objects, saving system resources (see article page 34).

The main point is that the apparent peace on the object front remains a phony peace. Microsoft is still hoping OLE will become a dominant technology before alternatives have a chance to catch on. Apple, IBM and Novell are hoping to flank it a march.

The sure way of knowing that this competition is good for users would be for Microsoft to endorse OpenDoc and promise to support it, Landry says. Or it could put control of OLE 2.0 and its future versions in the public domain.

Neither is likely to happen. Microsoft is relying on a backdoor solution — the Common Object Model — to generate the means to interface OLE to the world of CORBA-compliant object request brokers. Instead of two complex sets of interfaces, a third layer will be added by the specifications of the Common Object Model.

All parties will have to struggle to remain in synch or penalize users. Are these competitive vendors going to minimize their differences and continue to clasp hands, or will one pursue its own path? Microsoft has made only a threadbare commitment to cooperate, and no competitor looks strong enough to force a change.

Babcock is *Computerworld*'s technical editor. His MCI Mail address is 575-2737

National ID system proposed for immigration job tracking

By Mitch Betts
WASHINGTON

During the past 20 years, privacy advocates have beaten back numerous proposals to create a national identification system to prevent illegal immigrants from getting U.S. jobs.

But they may have met their match in former U.S. Rep. Barbara Jordan (D-Texas), the highly respected inquisitor of Watergate, defender of civil rights and member of the Orators Hall of Fame.

As chairwoman of the U.S. Commission on Immigration Reform, Jordan last week called for a national computer database that would allow employers to verify whether a job applicant is authorized to work in the U.S. Initially, the system would be piloted in the five states with the most immigration: California, New York, Texas, Florida and Illinois.

The American Civil Liberties Union and other critics said the registry will foster invasions of privacy by government surveillance. They criticized the pilot program as a "backdoor approach" to requiring a national ID card.

AP/Wide World Photos

Former U.S. Rep. Barbara Jordan: *National database will employ privacy safeguards*

Safeguards planned

Jordan vowed the proposed system would have privacy and computer security safeguards. Citing her long career as a defender of constitutional rights, Jordan said, "I would not be a party to any system I felt was an unwarranted intrusion into private lives."

Legislative proposals for a national ID card were rejected in 1986 and 1990. However, the combination of intense political pressure for immigration reform and Congress' respect for Jordan and her bipartisan commission give the latest proposal a better chance for passage, observers said.

U.S. Sen. Alan K. Simpson (R-Wyo.), a longtime supporter of a national ID card, predicted that election-minded senators will rush to attach the plan to any bill moving through the Senate this year, "even if it's tacked on to a bloated cow bill." Indeed, Sen. Dianne Feinstein (D-Calif.) said she plans to do exactly that.

Jordan outlined the immigration reform commission's preliminary recommendations at a U.S. Senate subcommittee hearing and said they would reduce employee discrimination.

"Employers would no longer have any reason to ask if a worker is a citizen or an immigrant," Jordan testified. "The only relevant question is, 'What is your Social Security number?'"

Technical details will not be available until next month. But the general plan is to let employers verify immigration status as easily as retailers check credit cards, using the Social Security number as the personal identifier.

Commission officials said the database would be built from employment databases held by the Social Security Administration and the Immigration and Naturalization Service.

The increasing use of the Social Security number as a personal identifier will make it possible to link various databases, critics said. "The privacy implications of a single identifier are extremely grave," said David Banisar, policy analyst at the Electronic Privacy Information Center in Washington.

Compaq repairs faulty PCMCIA controller

By Michael Fitzgerald

Compaq Computer Corp. used to field complaints for its stance as the last major notebook vendor without the PCMCIA standard. Now it is hearing about problems with the PCMCIA slot in some models of its first PCMCIA notebook.

The problems stemmed from a bad batch of PCMCIA timing controllers. In systems that use a 25/75-MHz DX4 processor or a 25/50-MHz Intel Corp. 1486DX2, off-kilter timing signals between the system and the timing controller triggered problems ranging from PCMCIA cards failing to work to the entire system crashing. A Compaq spokesman blamed the problems on chip speed, but one Compaq notebook with a 25/50-MHz chip does not have the problem.

The Compaq spokesman said the problem affected units built in early July. Compaq stopped production for the week of July 18, but sources near Compaq said several thousand units shipped with the bad part.

Compaq will swap the units with users who return them or will send out service technicians to deliver new notebooks on site and swap system configurations.

One vice president of information systems at a large financial services firm in New York, who asked not to be identified, said his firm received several high-end Elites. The company did not experience the problems, however, because they had not used PCMCIA cards with the notebooks yet.

He said the company will probably take Compaq up on its offer to replace the system boards.

The user said the glitch is a perfect example of what price wars have done to quality in the PC market.

"This is the difference when you don't have the margin anymore," he said.

DEC cuts spur support concerns

By Mary Brandel

Digital Equipment Corp. customers have many concerns about their embattled vendor, but topping their list is how Digital will continue to provide the level of service and support they have enjoyed in the past.

In a *Computerworld* survey conducted last week, 20% of 139 respondents cited service and support as their biggest concerns about Digital's future. The 20,000 announced layoffs were a major reason for this uneasiness. Respondents also feared that a weakened Digital would not be able to provide its historically high level of technical support.

The Multivendor Customer Service (MCS) unit, which provides product support, is supposed to be mostly spared in the restructuring, Chief Executive Officer Robert Palmer said in a recent teleconference.

"But if they keep losing billions of dollars, you wonder whether the services group can survive," said Craig Frey, a systems support analyst at NOR-AM Chemical Co. in Pikeville, N.C.

Frey said a recent occurrence with a DEC 90L server troubled him. When a Digital engineer discovered that the server was causing timing problems, the engineer "got scolded" for naming a piece of Digital equipment as the source of the problem. "That did not raise my confidence," he said.

On their minds

Aside from support, 139 Digital users expressed other concerns in a recent *Computerworld* survey: the company's ability to compete or retain market share (13.7%); its survival (11.5%); and whether Digital will sell off or discontinue specific products, particularly VAX VMS (8.6%).

In the dark

Small and medium-size customers said Digital has not clarified how it will provide them support in light of its announced intent to directly sell only to its largest accounts.

"We got a phone message from our new sales representative," said David Sacco, MIS manager at the rolled products division of Alcan Aluminum Corp. in Cleveland. "Somehow or another, that doesn't quite cut it."

Last week, John Rando, vice president of MCS, said his 15,000-strong group will continue to work with its 100,000 accounts. The high-level Digital Consulting side of the business works with only 500 to 1,000 accounts.

Customers assigned to third parties can choose between Digital or the business partner for service, Rando said.

"Digital services will continue, either directly from Digital or through partners backed by Digital," he said. Rando added that Digital would stand behind all its existing agreements.

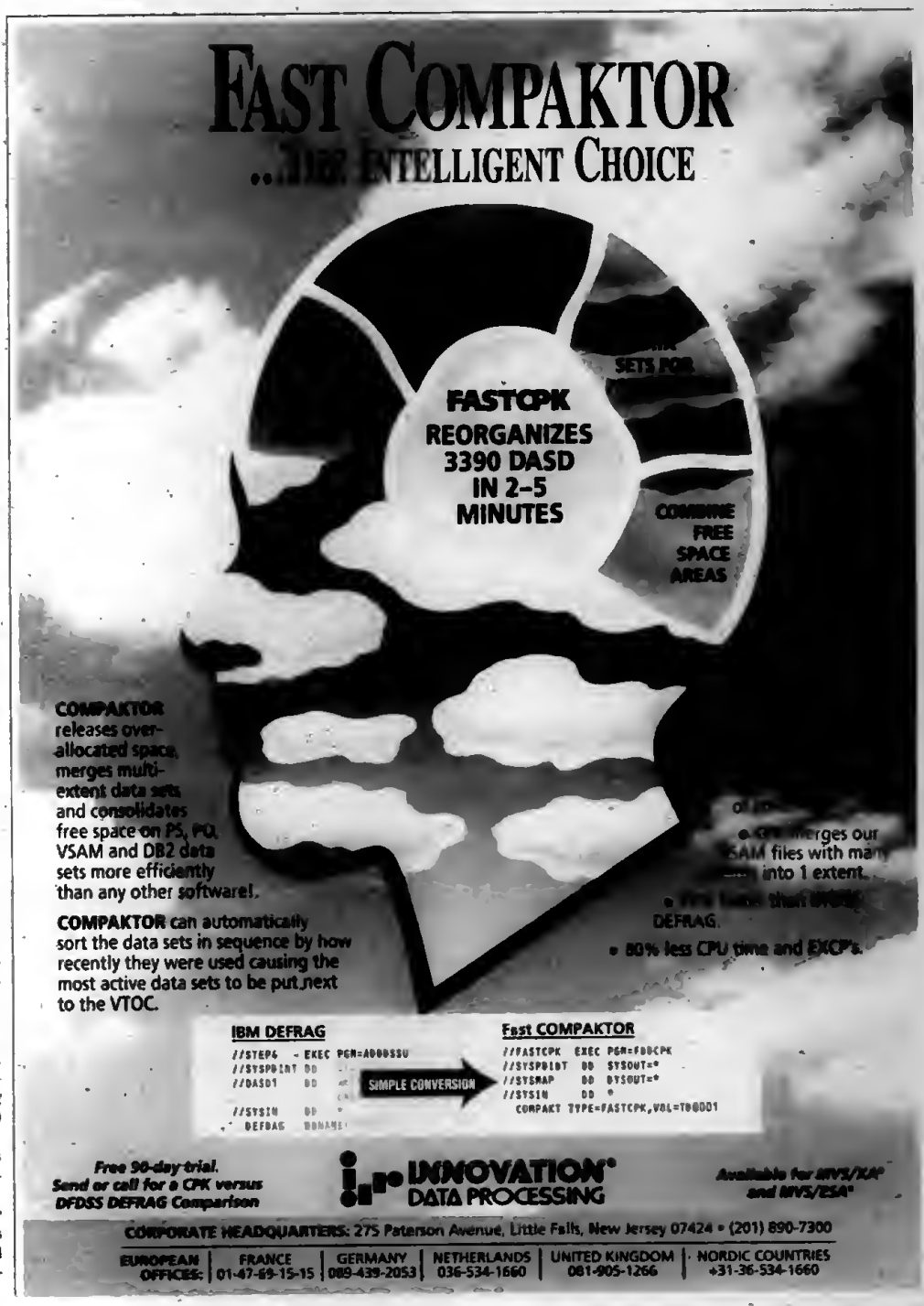
Another cause for customer concern is declining maintenance revenue, which fell 7.7% from 1993. Currently, service accounts for 45% of Digital's total revenue.

To offset declines, Rando wants to increase the group's multivendor support, which accounts for 20% of its revenue and which grew 40% this year. He also seeks to expand the network design and support, which account for 18% of revenue when combined with the network services performed by Digital Consulting. LAN integration brought in $200 million in revenue this year, Rando said.

In the past few weeks, rumors have also circulated regarding the sale of pieces of Digital Consulting, which is headed by Vice President Gershom Brebock.

Palmer last week acknowledged talks with Computer Sciences Corp. but said they were learning sessions intended to help Digital strengthen its partnerships.

Rando said the company "would be out of our minds" to give up network and systems integration. But even if pieces of Digital Consulting were sold, MCS could continue to provide systems and network integration work.



News Shorts

Firm concludes mainframe replacement

Northrop Grumman Corp.'s Commercial Aircraft Division in Hawthorne, Calif., last week said it is completing the replacement of all its key **IBM** mainframe applications with software running on **Hewlett-Packard Co.** Unix computers and **Oracle Corp.** relational databases. The one-year conversion was handled by information systems staffers and consultants from **International Integration, Inc.** in Los Angeles. The conversion, which has a two-year payback period, is expected to cut IS costs by 60%, said Joe Dugan, project manager.

Upgrade processor prices slashed

Intel Corp. has dropped prices up to 30% on its DX2 OverDrive processors, making the upgrade path cheaper. The price cuts put all members of the OverDrive family at under $400 each. A 50-MHz DX2 OverDrive processor originally $369 now costs $299, while the 66-MHz version will sell for $349 instead of $499.

Air Canada inks outsourcing pact

Air Canada has outsourced a major piece of its IS operations to **DMR Group, Inc.** in Montreal. Under an $80 million, seven-year contract announced last week, DMR will develop and maintain systems supporting the airline's flight, cargo and finance operations as well as sales and marketing and technical operations. Air Canada's reservations systems were outsourced earlier this year to **Galileo Canada, Inc.**, a subsidiary of Air Canada. **Advantis Canada**, a Canadian subsidiary of IBM, has been contracted to operate Air Canada's information services department.

Five companies, one OSF vote

The **Open Software Foundation** (OSF) agreed to let five companies pay $200,000 each and jointly fill one seat on the board of directors. The Cambridge, Mass., consortium previously restricted board members to those who paid a $1 million fee. The five were: **NEC Corp.**, **Siemens/Nixdorf Information Systems, Inc.**, **Silicon Graphics, Inc.**, **Sony Corp.** and **Transarc Corp.** Separately, the OSF set pricing for vendor licenses to Distributed Computing Environment (DCE) Release 1.1 at $100,000 for the DCE client software code for each target operating system. Pricing for the DCE 1.1 source code was set at $250,000 with full distribution rights.

SHORT TAKES Michael Tilson, senior vice president of **The Santa Cruz Operation**, was voted UniForum president, succeeding James Bell of Hewlett-Packard. ... **Symantec Corp.** said it will ship 32-bit versions of two of its flagship products simultaneously with Microsoft Corp.'s Chicago (Windows 4.0).... A UK-based division of **Schlumberger Oilfield Services Group** recently bought a third CM-5 massively parallel processor from **Thinking Machines Corp.** to study seismic data, the vendor said last week.... **UB Networks, Inc.** said it will ship NetDirector for Unix 2.0 next month. The network management product includes a SQL data repository and applications for managing hubs, routers and switches.... **Ross Technology, Inc.**, a semiconductor unit of Fujitsu Ltd., announced 72-MHz hyperSPARC microprocessor upgrade kits for **Sun Microsystems, Inc.** SPARCstation 10 and SPARCstation 20 workstations for $4,188 to $14,352. ... **Compuware Corp.**'s EcoTools systems management utilities now support Sybase, Inc. databases and products from Oracle, the company said last week.... **Informix Software, Inc.** last week released a Windows version of recently announced NewEra, a graphical application development tool. A Unix Motif edition of the $4,495 product is due out late this year.

Benchmark dispute irks users

By Jaikumar Vijayan

A recent benchmark that compared PowerPC- and Pentium-based systems has users from both camps furiously arguing about the accuracy of the results and their applicability in everyday commercial situations.

The results, released by Apple Computer, Inc. at last week's Macworld exposition in Boston, fly in the face of recent Intel Corp. claims about Pentium performance. The results of the test, conducted by Ingram Laboratories in Anaheim, Calif., place Apple's PowerPC desktops comfortably ahead of similarly configured Intel systems running on Windows from Compaq Computer Corp., Dell Computer Corp and Digital Equipment Corp.

Ingram Labs' controversial benchmark results

Machine	Processor	Performance*
Apple Power Macintosh 8100/80	80-MHz 601	6.77
Apple Power Macintosh 7100/66	66-MHz 601	6.06
Dell 5100 SP	100-MHz Pentium	5.58
Dell XPS P90	90-MHz Pentium	5.26

*In multiples of the speed of a 25-MHz 486SX

Call for new tests

The controversy is leading users of both Intel and PowerPC architectures to ask for benchmarks based on applications that are more typical of everyday use rather than programs that are basically optimized for one processor class.

Ingram, an independent testing company, timed a series of 25 application-based tasks on both types of computers. The tasks included loading files, scrolling and spell checking. Applications used for the tests included the following: Adobe Systems, Inc.'s Photoshop, Frame Technology's Framemaker, Aldus Corp.'s Freehand and Fractal Design Painter from Fractal Design.

In a series of exchanges in the Intel and PowerPC news groups on the Internet, several Intel users claimed the test results are inaccurate. The users, some of whom were interviewed for this story, argued that Ingram's comparisons are based on graphics-intensive, native PowerPC applications that are not typically used in Intel environments. Moreover, no popular Windows applications were even considered for the tests, they claimed.

Even some Macintosh users agreed that the choice of applications may have skewed the results. Most were graphics-intensive memory hogs that would typically be crippled in the 16-bit Windows environment the Pentium boxes were tested under. But Apple said the applications chosen for the test were mainstream applications for many of its customers, optimized to take full advantage of the PowerPC's inherent floating-point capabilities.

Those in favor

Power Macintosh supporters argue that the tests were based on popular and currently available applications.

"Very few applications are totally cross-platform right now anyway," said Stephen Grammont, a programmer whose Newton, Mass., firm develops game software for Macintosh users. "Those were very compute-intensive applications that tested the whole system."

Macintosh supporters say Intel has been able to derive good figures for its Pentium processors only because Pentium is often tested on Standard Performance Evaluation Corp. (SPEC) benchmark performance.

Apple has been reluctant to use the test because it maintains that SPEC performance ratings are subject to tuning by the tester and therefore not necessarily representative of actual application-level performance. Also, the test does not measure disk I/O or a system's graphics performance.

AT&T modems boost data transfer rate

By Michael Fitzgerald

Shortly after the new V.34 modem standard becomes official, AT&T Corp.'s Paradyne unit will outfit its V.34 modems with a faster — albeit proprietary — data transfer scheme.

AT&T said it will ship its first two V.34 modems, the Comsphere 3800Plus and the Comsphere 3900, in October. These will top out at V.34's 28.8K bit/sec. transfer rate. In December, the company will follow up with a software upgrade that pushes performance to 33.6K bit/sec., a boost of up to 6,000 words per minute.

Shortcoming noted

One drawback to the 33.6K bit/sec. upgrade is that it will work at that speed only when connected to a similarly equipped Paradyne modem.

"There's definitely some sex appeal to the [upgrade] speed, but you have to be talking to Paradyne users" to get it, said Joe Noel, an analyst at IntelliQuest, Inc. in Austin, Texas. "You're not going to buy it to go into Prodigy."

But Paradyne's core user base — large information systems shops with an IBM SNA environment — may jump at the faster rates, Noel said. These customers may be able to use the new modems to do heavy-duty data transfer on a dial-up basis, rather than having to pay for dedicated 56K bit/sec. lines.

"A big corporation would probably have to have four to six hours a day of connectivity to cost-justify a dedicated line, and this gives them a way to do it on a dial-up basis," Noel said. He said they could get the same potential from pure V.34 modems.

Still, users such as Stephen Hanser, vice president of communications at United Cos. in Billings, Mont., said the speeds would outstrip the telephone lines in their remote business areas, preventing them from using dial-up capabilities in place of dedicated lines.

"Even over dedicated services you might not get [9.6K bit/sec.] in some parts of Montana," he said.

No big deal

Some users said the proprietary nature of the upper ranges of the new Comsphere modems was not necessarily a major issue.

"You'd prefer to buy from one vendor," said Michael Radigan, manager of Xerox Corp.'s Nova sales force automation project. He said, however, that modems can cost so much that corporate purchasing departments refuse to approve their purchase. The AT&T Paradyne modem, for instance, will initially sell for $1,195.

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Application development

DCE tools multiply, attract user notice

By Melinda-Carol Ballou

Developers hoping to ease the pain and complexity of creating applications to comply with the Open Software Foundation's (OSF) Distributed Computing Environment (DCE) specification may find relief in several new tools.

Open Environment Corp. (OEC) in Cambridge, Mass., will this week announce a new tool set for developing DCE applications. The tools support a range of programming languages, including C, C++ and Cobol for server development, and a range of options, including Microsoft Corp.'s Visual Basic and Powersoft Corp.'s PowerBuilder, for client development.

"The OEC tools are interesting because they help make DCE practical. This is exactly what DCE needs if it's going to succeed," said Roy Schulte, an analyst at Gartner Group, Inc., a consultancy in Stamford, Conn.

DCE is a standard, which originated at the Cambridge-based OSF, that incorporates security and location services for distributing applications across multiple platforms.

The promise of the technology is eagerly anticipated at large corporate sites trying to manage applications across heterogeneous environments.

"We consider [DCE] a necessity," said John Shade, manager of distributed computing at United HealthCare Corp., a managed health care organization in Minneapolis. "I've got Unisys, IBM platforms, PCs, workstations. Our company is very aggressive about pursuing market share by acquiring other companies. I can't tell them, 'You can't buy those guys because they're running on an HP platform.'"

But building DCE applications is arduous, and few tools have been available. Key vendors targeting this arena include Hewlett-Packard Co., Gradient Technologies, Inc. and Transarc Corp.

Two options

OEC's DCE tool set, called Encompass, runs in both DCE and TCP/IP environments. It allows for the rapid development of distributed applications, officials said. Encompass is shipping now, with pricing starting at $16,000 per developer license and $2,000 for runtime licenses.

Obstacles to overcome

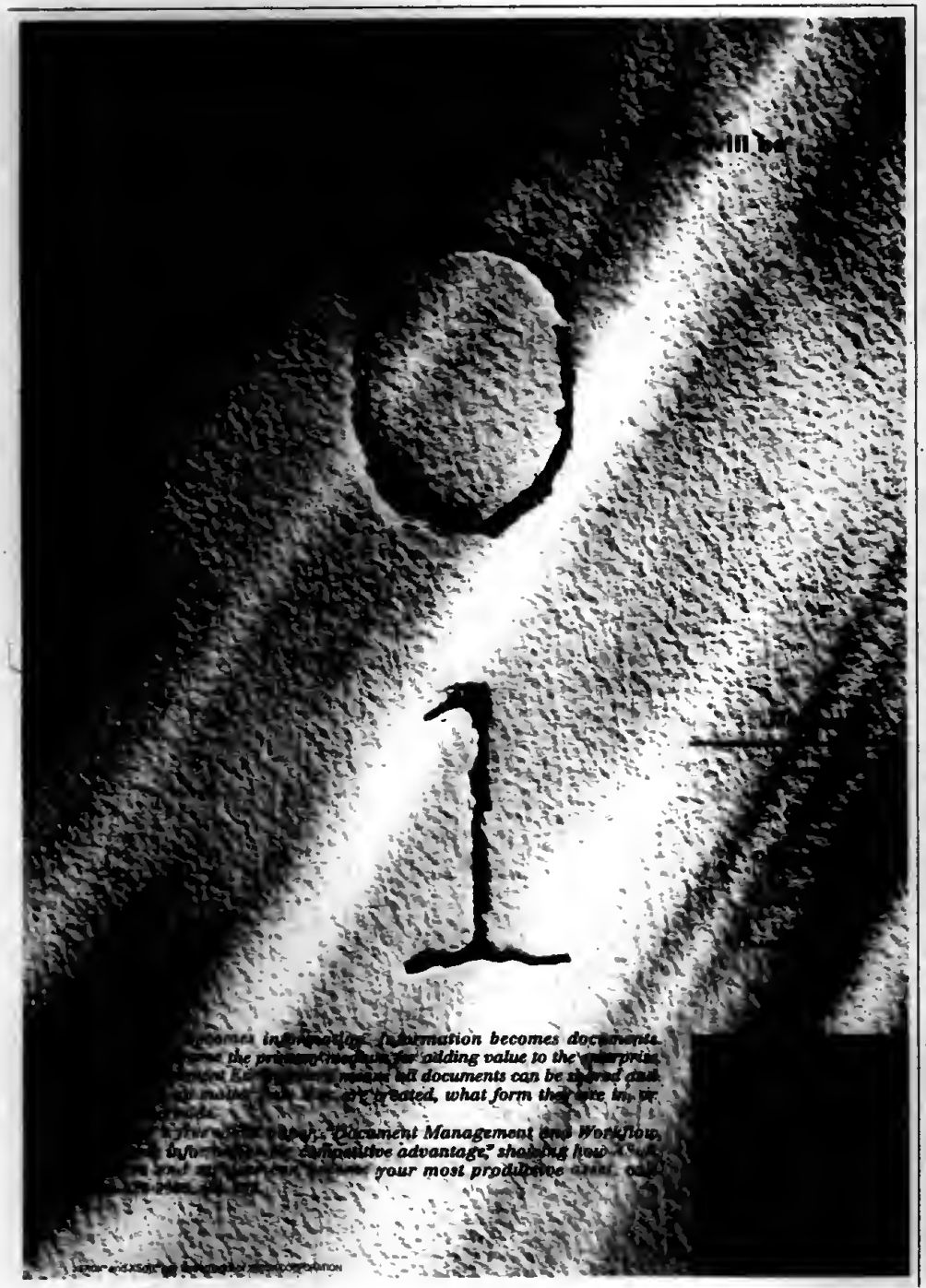
While well-heeled, cutting-edge developers are moving forward with DCE, it has yet to become wildly popular. DCE's complexity, along with its status as an evolving standard for which various vendors have developed multiple extensions, has held most companies back.

"We're not playing around with it much," said Bob Decker, Atlantic Richfield Co.'s manager of computing technology research in Plano, Texas. "We operate in a buy vs. build mode right now, though we want to be able to distribute compute-intensive pieces of an application to higher-performance servers. When [the technology] eventually gets there, we're hoping to buy it."

"We're being very conservative about it," said Rich Frobose, group leader for distributed computing at Lawrence Livermore Laboratory in Livermore, Calif. "We're being driven by customer requirements as opposed to what technology is available and what looks like the leading edge."

Frobose's group actually won an award for a DCE application, which it distributed across five disparate sites. He spoke glowingly last week about the advantages of the technology, despite his cautious stance.

"Being able to build services on top of DCE, which works in a heterogeneous environment, means we can bring in almost any vendor's machine and bring up our service in that environment," Frobose said. "It minimizes our support costs."



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Rwanda crisis puts IS on overtime duty

By Joseph Maglitta

In early March, Daniel Carr spent three days in Kigali, Rwanda, setting up and training local helpers to run a PC-based food logistics system in a small warehouse.

Carr, microcomputer manager at Catholic Relief Services, snapped photos of the proud new operators, said good-bye and headed back to the Baltimore headquarters of the international aid agency.

A month later, everyone Carr had trained, as well as their families, had been killed in the ethnic slaughter that erupted April 6. "All together, 30 or 40 people were killed," Carr said. "That affected me for a long time."

The relief service's Foodlog system — designed to track air, sea and land shipments of baby food, shoes, seeds, tools and other supplies — vanished.

Fortunately, the experiences of most information systems managers and professionals supporting efforts to aid millions of African refugees have been less traumatic than Carr's.

But relief agency executives agreed last week that the outpouring of aid for Rwanda has strained IS groups trying keep up with heavy processing demands.

Agency officials said donations three to 10 times higher than normal have jammed toll-free telephone lines and halted or reprioritized other IS projects.

As millions jam refugee camps *in Zaire and Rwanda, IS groups at relief agencies strain to process donations*

"Over [last] weekend we collected $400,000 in credit-card donations alone," said Jose Aponte, general manager of international services for the American Red Cross in Washington. "All that information has to make its way into the computer."

As telephone donations for Rwanda hit 3,000 last weekend, the U.S. Committee for Unicef in New York hired an extra service bureau to ensure check and credit-card processing was not bogged down, said Mark Sbiendorio, director of MIS.

Donations to Rwanda are expected to hit $1.5 million by the end of the month, he added.

Outsourcing lets 20 Unicef operations workers focus on reviewing contribution data wired to Unicef's Digital Equipment Corp. VAX cluster via new 9.6K bit/sec. modems, Sbiendorio said.

Constant tracking

At Oxfam America's Boston headquarters, three data-entry professionals work nights and weekends tracking the $120,000 in donations received daily, said IS administrator Martha Mhlanga.

The tiny staff uses a handful of IBM-compatible PCs linked via a Novell, Inc. network to process 2,000 pieces of mail daily and update the agency's 230,000-name database.

Bill Hampe, director of information services at World Relief Corp. in Carol Stream, Ill., said heavy donations and fund-raising processing has put less urgent IS jobs on hold for his six-person staff.

However, he said he worries that the extra loads will crash an aging NCR Corp. Tower serving 15 users. "If the system hiccups at all ... it could be very serious."

Users wary of delays in IBM sales transition

By Craig Stedman

IBM has put the shell of a new industry-focused sales organization in place and hopes to have it up and running by year's end. But some users and analysts are concerned that the changes will not take hold that quickly, resulting in a prolonged period of transition and disruption.

While IBM declined to comment on the status of the sales reorganization, industry sources said the managers in charge of the new vertical units were meeting last week to hash out how they will work together. The company is expected to provide more details later this month, the sources added.

Sales going downhill

"I understand [IBM's] intent, but I don't think their salespeople have that industry background, and it may take years before they get it," said Paul Maszczak, corporate director of data processing operations at C. R. Bard, Inc., a maker of medical equipment in Murray Hill, N.J.

Improvements are needed because IBM's sales force is "floundering," Maszczak added. "It's just massive confusion. I have various industry and product reps [from IBM] who try to sell me things without knowing what my big picture is. I'd like to say that I'm an IBM shop, but they're losing my confidence rapidly."

Charlie Burns, an analyst at Gartner Group, Inc. in Stamford, Conn., said he expects it will take up to 18 months — with a lot of turnover in that time — for IBM to get the sales force fully prepared to sell on an industry solutions basis rather than a technology orientation.

"The physical structure is not a problem, but the logical restructuring is what takes time," Burns said. "It's one thing to send a mainframe data center salesperson to school to teach him how to talk to user departments. It's another thing for him to actually succeed."

But some observers said they are optimistic about IBM's ability to change its sales stripes.

Service still OK

An information systems executive at a large Midwest insurance company said its IBM account team has already been cut in half by layoffs and assigned to work with other customers, yet service has not deteriorated. And more turnover at IBM may actually be beneficial for users, he added.

"If someone can't make the transition, you have to let them go and replace them with someone who can," said the executive, who asked not to be identified. "It's no different from what we face in our own company as we move to new technologies."

"If they do it in a way that we're not damaged, I'll be satisfied with it," said James Matsey, corporate director of IS at Reynolds Metals Co. in Richmond, Va. "It really gets down to the people they put in place and how it's managed." Reynolds also has a smaller account team assigned to it now but is "adjusting" to the lower level of attention, he added.

IBM to offer mobile consulting

By Ellis Booker

Last spring, amid its first-ever layoffs and a dramatic shuffling of its senior staff, IBM executives in the Midwest office faced a tough decision: whether to dramatically reduce overhead or cut additional workers.

The solution was a radical transformation of its sales and support staffs. They did away with fixed offices and desks and concocted a plan to arm about 2,500 employees with IBM ThinkPad laptops, each loaded with a suite of personal productivity and communications software.

Leveraging this experience, IBM next week will put the finishing touches on a mobile work force consulting practice.

"We can not only go out and consult on it ... we've done it ourselves," said Pat Howard, a principal at IBM's consulting group in Chicago.

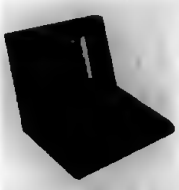
The mobility consulting effort will start small and scale up, according to IBM sources, who said they are in negotiations with several large customers but have no contracts yet.

Howard said the new practice will focus first on the business benefits of making a work force mobile.

"Shedding real estate is not it," he said. "You have to figure out how mobility better serves customers or gets products to market faster."

He said the practice will focus on these strategic aspects — not the least of which will be the management aspects of pushing workers out of the office.

Nationally, the effort will comprise about 20 individuals, with the Midwestern operation contributing about half. Steve Raber, director of the multimedia group at IBM Consulting and Services in Atlanta, will coordinate the national effort, which will draw on the skills of more than 100 employees in the Consulting and Services group. In addition, the mobility practice will merge with what is now IBM's sales force automation consulting practice, sources said.



Free at last

A recent internal IBM survey asked if employees would return to the traditional office if given the opportunity. Some 85% said no.

Officials promise an open systems approach to mobility consulting. For example, since March, IBM's internal operation has been rolling out an application based on Lotus Development Corp.'s Notes groupware platform.

Roving office

The Notes application is just one way the IBM workers keep in touch. This automation, along with a Lotus software suite on their ThinkPad 720s, is needed because these workers have no permanent offices.

Instead, when they arrive at an IBM facility they are assigned temporary desks. These are shared at a ratio of 4-to-1, as these workers typically spend just three hours over two days each week there. The rest of the time they are at customer sites, on the road or at home.

"We found the logistics of doing this were a breeze compared to convincing managers it was a good idea," said John Frank, a mobile work force consultant in IBM's Indianapolis office.

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System gets mixed reviews, but hopes are high as Daytona nears

By William Brandel

After the first year of putting Microsoft Corp.'s Windows NT through its paces, many early testers, while not unhappy with NT, say they will wait for Daytona (NT 3.5) before making any major commitments.

By and large, most users contacted who have tested or deployed NT said as a first version of the operating system, NT has lived up to their guarded expectations. Specifically, they judged it a fairly stable but relatively slow and resource-sapping initial release of Microsoft's first 32-bit multiprocessing operating system.

"We have great hopes for it," said Lewis Knopf, senior vice president of information management systems at Reuters, Inc. in Hauppauge, N.Y. Reuters has been testing and developing desktop and server applications for NT for two years and was highlighted as an early NT supporter when the product was announced last year. Currently, Reuters is running NT in production pilots throughout the company.

"NT will support a reasonable-size chunk of business," Knopf said. "We want to wait for Release 3.5 before developing mission-critical applications for it, [when] NT will get leaner and meaner."

Like other users, Knopf wants a faster and more powerful operating system before developing I/O-intensive mission-critical applications that will run on it. In the meantime, Reuters is counting on a faster NT 3.5 and plans to deliver two major NT-based applications toward the beginning of next year, Knopf said.

Watchful and wary

While Microsoft officials contend that some users are holding out because they are wary of the .0 release syndrome, or in NT's case, .1 release, they acknowledge that users will probably be happier with the performance improvements in Daytona.

"I wouldn't say that it is going to scream running at 4M bytes of RAM, but a 16M-byte machine will do a lot of stuff and run a lot faster," said Doug Henrich, director of the developer relations group at Microsoft.

Many information systems sites that are not testing NT said they are still keeping their eye on it. For example, Whirlpool Financial Corp. in Benton Harbour, Mich., sees NT as a potential platform for its line of business applications.

"I just don't see it now as a seven [day] by 24 [hour] product that you can run major applications on," said James Haney, director of Whirlpool Financial's IS department. "We are at least a couple of years from betting the company on it."

One obstacle that prevents Whirlpool and a number of other users from adopting NT is a perceived limited choice of major applications on the market. While Microsoft contends that 800 NT applications are now available, the company has failed to convince many users that NT is anything more than just another client operating system.

"We're satisfied with it as a server," said Bob Quick, director of information technology at Northern Life Insurance in Seattle. "But the hardware requirements [for a client] are way beyond what we have for standard use."

First up

Although Microsoft is positioning NT as a high-end client, its first desktop applications for NT will be Excel and Word.

In fact, most IS sites contacted are now mostly using NT to run Microsoft's SQL Server application or as an upgrade from Microsoft's OS/2 LAN Manager product or Digital Equipment Corp.'s Pathworks (which is based on OS/2 LAN Manager).

"It only runs 5% faster than LAN Manager, but it is much easier to use," explained Tim Eichholtz, director of IS at Betz Process Chemicals, Inc. in Woodlands, Texas. He said Betz runs SQL Server on NT.

But Betz's parent company has already standardized on Novell, Inc.'s NetWare. If NT is to make any further inroads into Betz, it will have to prove itself to be a superior mission-critical platform to Novell's 4.x platform, Eichholtz said.

"We'd like to move it all over to NT," Eichholtz said. "But for that to happen, NT is going to have to sell itself."

NT's first year

CONTINUED FROM PAGE 1

Kwatinetz, an analyst at PaineWebber, Inc. in New York. While that figure falls far short of Microsoft Chief Executive Officer Bill Gates' much-publicized vow to sell 1 million copies in the past year, it makes a respectable showing against the 800,000 Unix operating system shipments in calendar 1993, Kwatinetz noted.

Most of NT's successes in the workplace have not been in downsizing per se. Microsoft officials acknowledged that a large percentage of NT deployments have been new applications at the departmental level or below.

"We have the beta of Daytona running here as production [platform], and it is very reliable now. We have had few problems with the applications we have here," said John Berting, manager of software engineering at Rheometrics, Inc. in Piscataway, N.J.

"I think once more people see what is in Daytona, particularly those working with Unix and Macs, they'll see a more compelling story," said Brian Moura, assistant city manager and finance director in San Carlos, Calif.

But to continue making serious progress with users, NT must compete head-to-head with two extremely well ensconced competitors — Unix and Novell, Inc.'s NetWare.

However, NT has not made a serious dent so far in the higher end of the Unix server market.

"Part of the problem has been that while you could scale NT up to 16 processors, the SQL Server did not [scale up]," said Bill Cornfield, president of Windows Support Group, a New York consultancy. But SQL Server 95, a new version of SQL Server due early next year, will have better scalability — as will Daytona — to allow it to run on machines with up to 16 processors, he said.

Not surprisingly, Microsoft's other system plans dovetail nicely with NT. Chicago, the next major release of desktop Windows, which is due early next year, was designed to provide an ideal client for NT.

Under construction

Some key server-based applications are available for NT, but most programs used for mission-critical application development have not shipped

AVAILABLE:

VENDOR	APPLICATION
Oracle Corp.	Oracle 7.015 Server for Windows NT
Gupta Corp.	SQLBase Server 5.2
Informix Software, Inc.	Informix-SE
Microsoft Corp.	SQL Server for Windows NT

NOT AVAILABLE:

VENDOR	APPLICATION
Oracle Corp.	Oracle 7.1 Server for Windows NT
Informix Software, Inc.	OnLine 6.1 (7.0) RDBMS
IBM	CICS for Windows NT
IBM	DB2 for Windows NT
Lotus Development Corp.	Notes for Windows NT

"As more people go to Chicago, which in my mind will be a major sweep for Microsoft, I think it will drive NT sales because Chicago's connectivity to NT servers works so nicely," Cornfield said.

Microsoft's other new version of NT, Cairo, is further off than Daytona. It has been delayed until at least late next year. Cairo will provide the cornerstone for a brave new world of object-oriented computing.

"Since Cairo will be using the same user interface as Chicago, we will [use Chicago] as a training ground for users," said Briscoe Stephens, advanced science information systems coordinator at NASA in Huntsville, Ala.

Rushing out the apps

Additionally, to spur demand for the underlying system, Microsoft is hurrying to complete by early next year a suite of server applications that corporate developers can use to build the kind of custom applications they need to run their businesses.

Without such custom applications, development tools users would see little reason to deploy NT as a server. Two of the applications, the SQL Server database management system and the SNA Server, which provides connectivity to IBM mainframes, have been out since last year. Two others, the Exchange Messaging Server and the Systems Management Server, code-named Hermes, are still pending.

Also, the current version of NT Workstation, Version 3.11 for both server and workstation, requires at least 21M bytes of RAM to provide good performance. That requirement has proved daunting for many users.

That will change with the debut of Daytona next month. Applications running on Daytona "take off" at about 15M bytes of RAM rather than 21M bytes, said Mike Nash, product manager for NT Server.

486 add-in board for Power Mac shown; takes up vital slot

By Mark Halper
BOSTON

With Macintosh users in search of improved Windows support, Apple Computer, Inc. last week demonstrated an add-in 50-MHz 486DX2 board at Macworld here. The company also hinted that it will market the product once the Power Macintosh is equipped with the PCI bus next year.

However much Apple users may need the 486 board, there is one hitch. As it did in a similar demonstration in June, Apple commandeered the Power Macintosh's vital add-in slot to house the 486 board. That slot, known as the processor direct slot, normally supports graphics boards and other trinkets popular with Macintosh users.

Apple has said it plans to incorporate the PCI, or Peripheral Component Interconnect, bus in next-generation Power Macintoshes as soon as early next year.

Acknowledging that the current architecture could hamstring potential 486 board users, Dave Daetz, Apple product line manager, said, "PCI opens up a lot of possibilities that get away from processor direct."

Power delay

Microsoft's forthcoming Chicago operating system is written in assembler language and is therefore not portable to the PowerPC, noted Pete Higgins, Microsoft senior vice president of desktop applications.

This is key because many Macintosh business users coexist as Windows users. They are interested in Windows emulation to leverage their investment in PC software so they do not have to buy Macintosh versions of those programs.

In fact, Management Apple Computers in Information Systems, a corporate user group in Mason, Ohio, recently ranked improvements in Windows emulation as its second highest concern after networking.

The logical choice

Users fully expect that once Apple supports PCI, the company will bring the add-in board to market to improve the software emulation support Apple provides using Insignia Solutions, Inc.'s Soft Windows program.

"That would make all the sense in the world because they don't want to block off the one expansion slot they have," said Bob Anderson, a senior analyst at A. O. Smith Automotive Products, Inc. in Milwaukee.

If Apple were to offer its own 486 board — still an unsettled question — users would face a choice of software vs. hardware solutions for running Windows software on Power Macintoshes.

"All things being equal, software solutions are usually easier," said Martin Zumbrennan, systems administrator at Covey Leadership Center in Provo, Utah.

While users have praised Soft Windows for providing excellent compatibility with Windows programs running on the Power Macintosh's PowerPC processor, they have expressed two concerns. One is that it runs some programs such as Microsoft Corp.'s Excel spreadsheet slowly. The second is that Soft Windows is written to the 286 processor and therefore does not take advantage of features on software written to the 386 and beyond.

MACWORLD EXPOSITION

Apple and Insignia plan to offer a 486 version of Soft Windows by the end of the year. But although that program will provide more current compatibility, it will not necessarily offer faster performance.

In an effort to grease the skids for that product, Insignia this week is launching a maintenance and support program, which will include an upgrade to the 486 emulator when that upgrade becomes available.

Out of reach is out of style, thanks to the new CELLect 14.4 wireless/wireline data and fax modems from UDS. These PCMCIA devices put any palmtop, laptop or notebook computer into the communications loop, whether or not a telephone line is available.

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MOTOROLA

Groupware ramps up slowly

Expo gives users glimpse of market's future

By Lynda Radosevich

Lotus Development Corp.'s Notes, along with groupware in general, is getting a lot of attention in the press as a key technology that will help drive corporate computing into the future. However, the broad base of users is still exploring its possibilities, analysts said.

As a result, users interviewed last week said this week's GroupWare '94 in San Jose, Calif., will largely be a "get-to-know-what's-out-there" show. It will also provide a forum for dozens of new companies trying to break into the groupware market, which includes everything from automated workflow and document management to electronic conferences and PC videoconferences.

GroupWare '94

Vendors go head-to-head

Not surprisingly, Lotus Chief Executive Officer and President Jim Manzi will tell about extending the organization through groupware. Sessions expected to attract attention include a Cigna Corp. discussion on how the company integrated workflow with legacy systems and a face-off between Lotus, Microsoft Corp. and Novell, Inc./WordPerfect Corp. executives.

Product announcements expected include the following:

- **Sterling Software, Inc.** in Woodland Hills, Calif., and **IBM Canada Ltd.** will announce a Windows-based business engineering tool said to allow users to model a department's workflow in order to define the business process. The $15,000 price tag includes the software, training and consulting.
- **Quality Decision Management, Inc.** in North Andover, Mass., will unveil a suite of workflow applications for Notes. For $9,995, users get a workflow engine, a two-way link from Notes to Microsoft's Project, help desk applications, a business planning system and a customer management system.
- **Forefront Group, Inc.** in Houston will introduce a new version of its Virtual Notebook System, a real-time PC, Macintosh and Unix wide-area conference application for projects such as concurrent engineering. Version 4.0 adds object-oriented features that help guide conference attendees through a meeting. Users can update the original information on-screen or leave the original objects intact and annotate comments. Prices start at $6,000 per server and $595 per client.
- **Team Software, Inc.** in Houston will unveil a version of Channels. Channels is collaborative computing software that lets users send multimedia objects, including graphics, voice and video, as postings to discussion forums.
- **Keyword Office Technologies Ltd.** in San Jose, Calif., will announce a viewing and conversation utility for Notes. For $89 per user, Keyview for Notes permits users to view files attached to messages even if they do not have the application that created the files.
- Twenty start-up companies will introduce new products, including **Age Research** in Carson City, Calif., with applications for operational planning; **Connectware, Inc.** in Richardson, Texas, with software that pulls information from multiple networked sources into one "in-box"; and **Uptime Computer Solutions, Inc.** in San Jose, which will introduce a contact management system.

A closer look at groupware. See page 45.

Operating systems

HP's next Unix hones multiprocessing

By Jean S. Bozman
PALO ALTO, CALIF.

Hewlett-Packard Co. is readying its HP/UX Release 10 Unix operating system for an early 1995 release, industry analysts said last week. The system will replace HP/UX 9.0 and provide a unified operating system for the HP 9000 Series 700 workstations and Series 800 servers.

Users will not be the first to see HP/UX 10, even when all of its features are ready, an HP spokeswoman said. "We're going to be releasing it in stages, as we roll it out to [independent software vendors] or third-party partners first," she said. "But we're on track with it."

However, industry analysts said HP/UX 10 was delayed slightly and that users had expected it to ship by fall. "Apparently, the shakedown cruise continues, and HP/UX 10 is drifting out in time," said Tom Wilmott, a vice president at Aberdeen Group in Boston.

Most important, shipping a single operating system for workstations and servers will ease installation at user sites and lighten users' housekeeping tasks, analysts said.

Users may have seen some of HP/UX 10's symmetrical multiprocessing (SMP) improvements in versions of HP/UX 9.x that support HP's T500 SMP machines, Wilmott said. "When they moved to the T500, they enabled multiprocessing, but they kind of hot-wired it in the garage." Release 10 will probably have a more refined approach to multiprocessing, including kernel support for multithreading, he said.

HP/UX 10 is already in beta-testing at independent software vendor sites and some large customer sites, said Terry Bennett, director of technical systems research at Computer Intelligence/InfoCorp in Beaverton, Ore. Systems management software is layered on top of the operating system, but it will be bundled with the HP/UX package, he noted.

Users said they are looking for improved systems management and a multithreaded HP/UX kernel. "The things that are going to impact the users the most are the DCE code rolling into the kernel and if they add the multithreaded kernel for SMP servers," said Doug Eltoft, president of the HP workstation user group InterWorks, Inc.

Future features

INDUSTRY ANALYSTS EXPECT HEWLETT-PACKARD TO PUT THE FOLLOWING FEATURES INTO ITS FORTHCOMING HP/UX 10.0 RELEASE:

- First set of unified code for HP 9000 Series 700 Unix workstations and Series 800 Unix servers.
- Improved system management features.
- Better support for distributed computing software.
- Improved support for multithreaded applications.
- Support for the Common Desktop Environment.

Agencies earn system awards

By Gary H. Anthes
WASHINGTON

A decade ago, Jerry McFaul was at the proverbial "bleeding edge." He saw the promise of a little-known technology called CD-ROM, and he began pushing the federal government to use it for disseminating and storing large amounts of data.

McFaul, a computer scientist at the U.S. Geological Survey in Reston, Va., founded what is now the largest CD-ROM user group in the world, a nonprofit foundation with 7,200 government and private-sector members in 50 countries [CW, Feb. 7].

McFaul and other federal information systems managers, who so often find themselves under a cloud when projects go awry at taxpayers' expense, had their day in the sun last week when the General Services Administration handed out awards for best practices in information resource management (IRM). McFaul and eight other IRM officials and agencies received awards.

Jerry McFaul *won for his CD-ROM work*

The awards were given to a broad array of defense and civilian agencies for accomplishments ranging from downsizing to improving customer service to effectively leveraging legacy systems.

Done right

"Too often what gets attention in the federal government is the things that go wrong," said the GSA's IRM commissioner, Joe M. Thompson. "Today we have an opportunity to show what can be done when well-qualified individuals get together to solve a problem."

"Jerry [McFaul] has been a pioneer and a smart guy," said Terry Miller, president of Government Sales Consultants, Inc. in Great Falls, Va. "He's really helped government agencies come to grips with CD-ROM."

But Miller was less impressed with some other award recipients. "The IRS is screwed up beyond belief," he said.

Miller similarly sniffed at the award given to the Air Force Standard Systems Center, which for years has been plagued by protests for its "desktop" series of PC buys and other procurement snafus.

That Air Force center clearly has a tough mission: deploying 1,776 people to develop standard systems for 200 Air Force locations worldwide while maintaining 16 million lines of computer software.

Kenneth Heitkamp, technical director of the center, said the following "best practices" helped his unit win the award:

- Substantial user involvement in systems development. A third of the staff is drawn from user disciplines such as supply and aircraft maintenance.
- Rigorous use of software engineering disciplines, including the software development maturity model from the Software Engineering Institute at Carnegie Mellon University in Pittsburgh.
- Central repositories of software for reuse and standard software development tools.
- A 24-hour, 60-person help desk that handles 12,000 calls a month.

Robert Yates, vice president for information services at the Tennessee Valley Authority, said the TVA trimmed its IS budget by $5 million, in part by reducing the number of management layers from five to three and by imposing greater discipline on the organization.

The GSA has installed an executive information system for property management. See page 46.

Why dBASE is the best way to build database applications for Windows

Borland will soon release the most extended and powerful dBASE® ever produced. It will provide exciting new capabilities for managing your data, while leveraging the knowledge and skills you already have. It will set the standard for data management and applications development for years to come. This first article in a three-part series gives you an overview of dBASE for Windows.

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The only compatible solution for all dBASE users

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dBASE for Windows provides a single solution for your entire organization. Interactive users can get started instantly with an impressive array of intuitive data management capabilities. The new dBASE Navigator with Catalog Window lets you organize all your related files visually with simple drag-and-drop procedures. The new Visual Query Designer with SpeedFilter™ technology returns answers fast, even when you're searching multiple tables. And with the FormExpert,™ SpeedMenus,™ Interactive Tutors™ and on-line help, interactive users will be up and running and seeing productivity gains right away. Power users and developers have even more to look forward to. They get the tools and language they need to build robust Windows and client/server applications fast. And the IS organization gets a single solution that leverages their existing dBASE knowledge and resources to smooth the transition to client/server.

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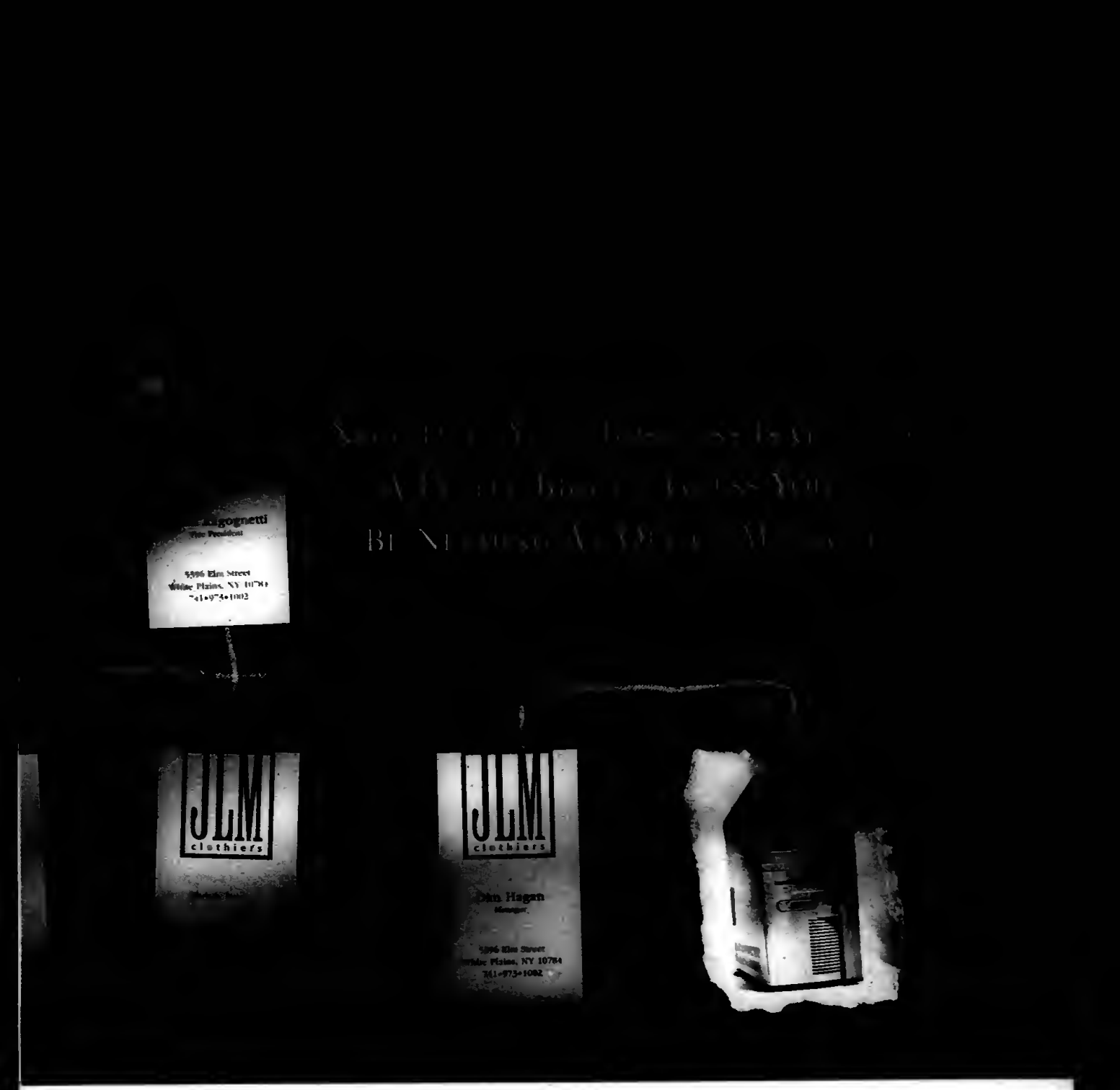

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Electronic erotica spreads virus

By Gary H. Anthes

For centuries people have gotten viruses from sex. Now they can catch them from electronic sex.

Although no one knows the exact number, thousands of people worldwide have unknowingly infected their PCs with the "kaos4" virus by downloading software from alt.binaries.pictures.erotica. This popular Internet bulletin board contains sexually explicit photographs, sequences from X-rated videotapes and sex-oriented shareware.

Kaos4 may have set a record for its rapid spread around the world. As one of the Top 5 Internet news groups, alt.binaries.pictures.erotica has readership in the hundreds of thousands.

"This may be the most effective distribution tactic yet accomplished by a virus author in terms of infecting the most possible machines in a very short space of time," said David Shapiro, whose "Sexotica Collection" shareware was used by an unknown perpetrator to plant the virus on the Internet. "I have been trying to do what I can to minimize the damage it causes," he added.

Shapiro said one Internet bulletin board operator had more than 700 files infected in eight hours before he detected the virus. The cleanup process took five hours of laboriously restoring the files from backups.

The erotica news group contains pictures of men and women scanned from magazines such as *Playboy* and *Penthouse*, plus animation files with X-rated sequences from videotapes, many posted in violation of copyright law.

The National Computer Security Association (NCSA) in Carlisle, Pa., said kaos4 is a nonresident infector of .COM and .EXE files, increasing those files by 697 bytes. Apparently written to be a harmless virus, it contains no intentional payload such as the destruction of files.

Nasty bytes

However, the virus can be a considerable nuisance because it may prevent booting from the hard disk and may render some infected programs inoperable. "To clean up, it is necessary to boot from diskette and repair or replace the system files," an NCSA advisory said.

NCSA security consultant Jonathan Wheat said kaos4 is not a particularly harmful virus, but it does provide useful lessons for users dabbling in the Internet. "You definitely want to scan any software you download from anywhere, just to be on the safe side," he said.

Although many companies have policies that require the scanning of all new software, often they are not enforced, especially for shareware downloaded informally by employees, according to computer security experts.

Wheat also said it is important to keep antivirus software up to date. When kaos4 surfaced late last month, only one virus scanner, from McAfee Associates, Inc. in Santa Clara, Calif., would reportedly do the job.

Now, most of the major scanners are being updated to find it, Wheat said.

The virus contains the string "KOHNTARK," which is a pseudonym for a virus author who promotes the notion of "good" viruses. He is also noted for his ability to code viruses that escape detection from virus scanners.

"It could be that he was attempting to disprove the thesis that all viruses have the potential to cause harm by creating and releasing a virus that was totally harmless," Shapiro said. "If that was his motive, he has clearly failed."

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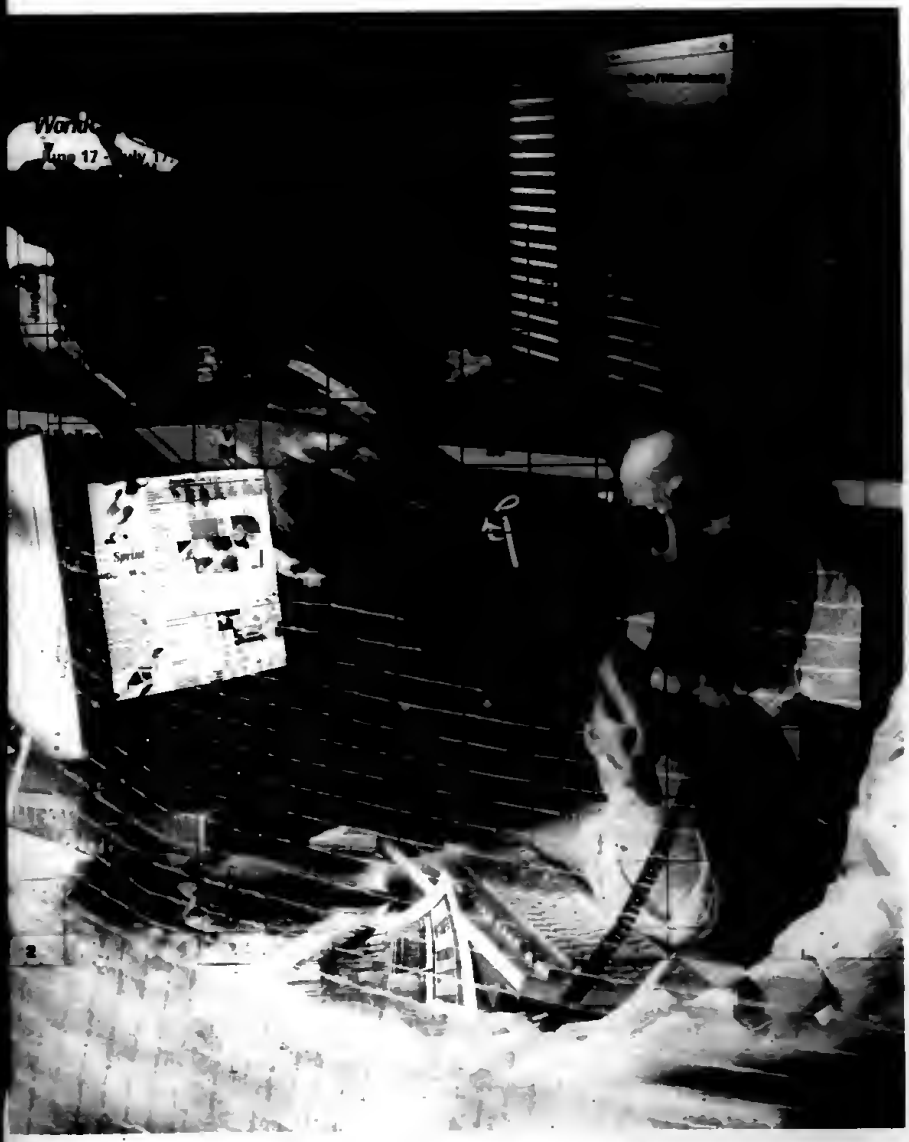

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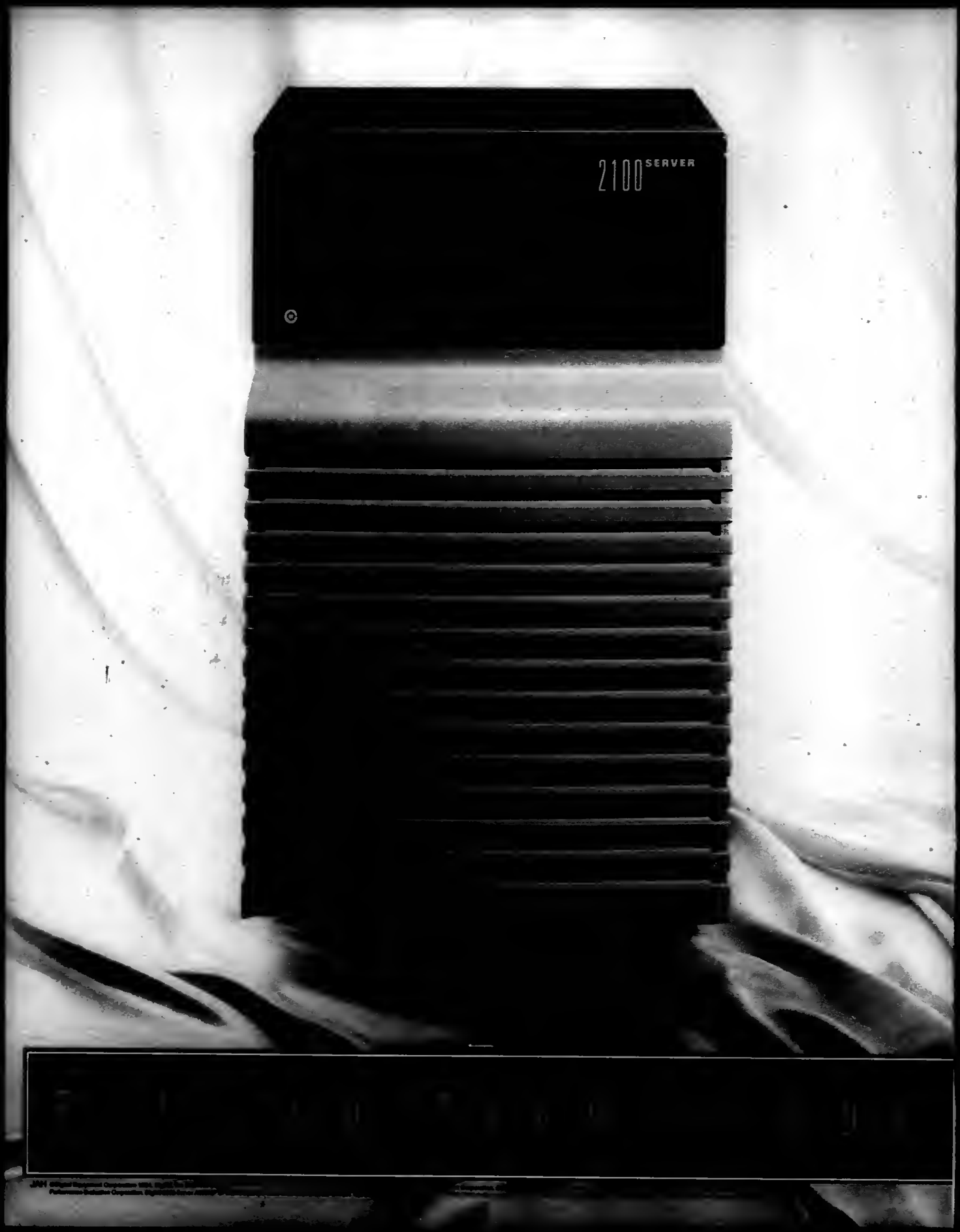
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SPECint92	124.0 per CPU	108.8 per CPU	60.3	97.6
I/O (MB/sec.)	132	32	32	80
INTERNAL RAID	Yes	No	No	No
ENTRY PRICE (US $)	$26,900	$76,000	$46,700	$66,400

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Vancouver exchange rates client/server a Buy

By Kim S. Nash
VANCOUVER, BRITISH COLUMBIA

■ The Vancouver Stock Exchange is on the verge of an estimated $20 million information systems overhaul that will replace 15-year-old IBM mainframe programs with distributed Unix-based systems within 18 months.

The exchange also plans to exit one of its three lines of business because the $30 million price tag for the move to client/server was just too high, according to Jim Kent, manager of technology planning.

Also part of the upheaval is an Oracle Corp. vs. Sybase, Inc. database decision. Because databases will be the second biggest line item after consulting, that judgment is crucial, Kent said.

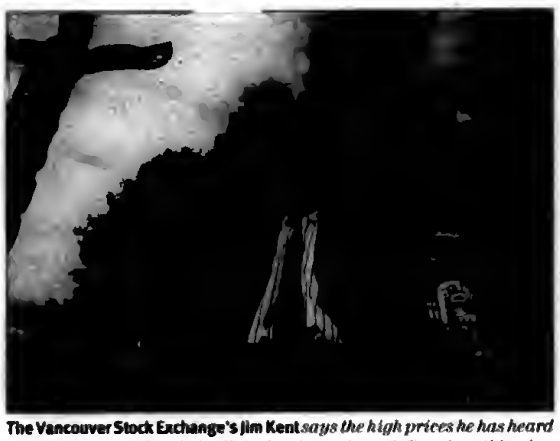
The 87-year-old Canadian exchange differs from U.S. counterparts because, along with trading systems, it actually handles two other lines of business: clearance systems and accounting services to brokerage firms that trade shares on it. The exchange plans to ditch the brokerage service portion as of April 1 995.

"We had consultants in here who figured that what we wanted to do would run about $30 million when all is said and done. It's not worth it," Kent said. Brokerage services brought in just $6 million to $7 million in annual sales, he added.

Board members agreed that modernizing IS is a must but balked at the bill. That estimate included software, hardware, training and consulting costs related to migrating both brokerage services and clearance systems.

Keeping clearance systems — applications that reconcile daily orders between the U.S. and Canada — but slicing off brokerage services trims the client/server budget to a comparatively slim $10 million, Kent said.

Technologically, the plan would move rickety old applications off an IBM 3090 to Hewlett-Packard Co. HP 9000 Series 800 servers.



The Vancouver Stock Exchange's Jim Kent *says the high prices he has heard from Sybase and Oracle for Unix databases have 'left me breathless'*

Trading systems, meanwhile, will be untouched. Traders went fully client/server in 1990, with the installation of a Stratus Computer, Inc. fault-tolerant host feeding several hundred IBM PS/2 PCs. That system won a Canadian Information Processing Society's award for Canadian-made software.

Ironically, the same exchange that co-built that award-winning client/server application with TCAM, a New York-based securities software firm, is "in the dark" about the rest of the IS operation, Kent noted.

Further, the exchange is not leading the migration itself but relying on help from TCAM.

But TCAM does not offer any Unix applications. So a big chunk of time and money will be spent on what looks to be a rather complex task: porting brand-new TCAM clearance programs from Digital Equipment Corp. VAX/VMS to the HP/UX operating system.

No good options

The decision to stick with TCAM "was the best of multiple undesirable options," said David Crouch, managing director of Alexandra Projects Ltd. in Vancouver.

Basically, each country in the world needs only one or two clearance systems, so there are few third-party packages available for such a small market, Crouch explained. Plus, the Vancouver exchange's internal staff largely lacks the modern application development skills needed to get the job done, he said.

Crouch was hired to help workers deal with looming change. If exchange employees are similar to other users he has coached, 5% to 15% of the exchange's 300 workers will not adapt and will leave the company, he said.

On the database side, both Sybase and Oracle have made bids for the exchange's business, each promising on-site consulting and migration help. So far, however, the high prices both vendors are asking have "left me breathless," Kent said. He declined to give figures.

Users have steadily named price as an increasingly critical feature in choosing a database for the past 10 years, according to a recent survey by Sentry Market Research.

Adaptive systems

CONTINUED FROM PAGE 1

On the other side are a handful of modestly capitalized third-party software and hardware companies such as Artic Technologies, Inc. in Troy, Mich. Like other firms in the specialized world of computerized accessibility products, Artic has been bedeviled by application mapping problems. The primary source of these woes are the multiple program interfaces commercial developers randomly built into mainstream Windows-based packages.

"The primary problem is that so many applications programmers don't use the standard APIs already in Windows. Microsoft itself is one of the primary offenders," said Artic President Dale McDaniel. "It leaves us pulling our hair out because we don't have enough hours or staff to take everybody's applications and write special drivers for them."

Playing catch-up translates into additional costs for corporations. This, in turn, can prompt internal political battles over who pays. At Federal Express Corp. in Nashville, officials have yet to decide how to distribute the costs of adaptive hardware and software used by nine customer service representatives who are blind or visually impaired.

"Economics is a major issue any business needs to look at because [adaptive] equipment is not cheap," said Scott Hooker, a senior information planning analyst at Fedex. Hooker, who is blind, functions as a technical troubleshooter for the nine workers.

When blind employees are first hired, state rehabilitation agencies generally pay for adaptive equipment, Hooker noted. "But once the employee is no longer a client of that agency, the question is, where does the money come from to update their equipment?"

Looking for a money tree

At Bell Atlantic, disabled employees are furnished with the equipment they need to do their job, said Ginger Rogers, a job accommodations specialist in the human resources department.

"But human resources doesn't have a bucket of dollars where any person with a disability can come to us and we'll pay for it," Rogers said. "It's a departmental responsibility. If accommodation is going to allow an employee to do a job, [the department] is going to have to eat it."

Accommodation costs could be reduced greatly if software vendors used a standard set of interfaces in their commercial packages from the outset, rather than targeted information systems users who are blind or otherwise disabled as a totally separate market, according to Leedy Day, a former software engineer at Digital Equipment Corp.'s storage products group in Colorado Springs.

For example, Day said IBM sells a separate screen-reader package that gives blind users access to its OS/2 operating system as well as Windows. "But the functionality in that package, which costs $800 on top of buying OS/2, could have been included in OS/2 itself," Day said.

Had Microsoft implemented universal hooks in its Windows operating environment, it would have cost users 25 cents to 50 cents more per copy, Day estimated.

Day said one of the reasons she left her job at Digital after 10 years was irreconcilable differences over accessibility issues. Another was pure frustration.

"I left largely due to frustration [I felt over] getting smaller and smaller pieces of things to do while hearing about all the neat stuff that was going to be developed," Day said.

Like other users who are blind, Day emphasized that she does not view today's lack of software accessibility as some diabolical plot hatched by vendors. Rather, she and others such as Hooker believe it is an awareness issue.

"Most product designers that don't use universal hooks are not doing it on purpose. They're not out to ruin some blind guy's day," Hooker said. Instead, "They're just not aware of what it does to access."

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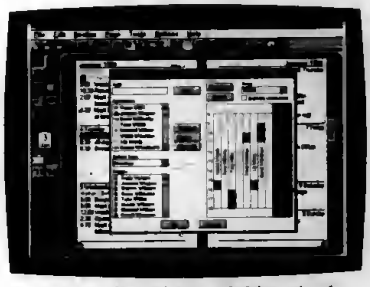

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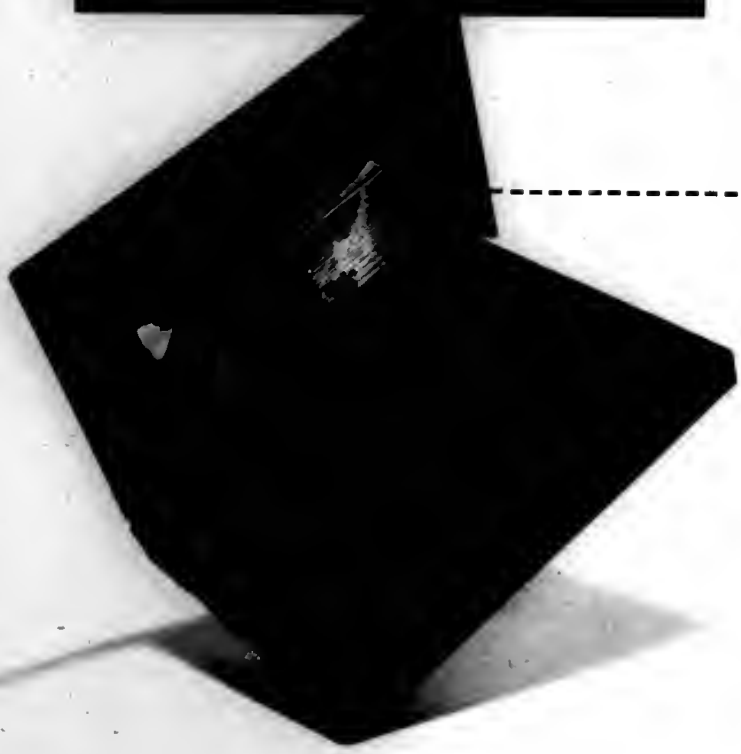

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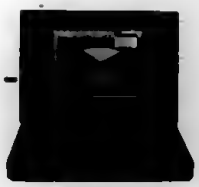

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Vendors peddle 'fast' Ethernet as quick fix

By Stephen P. Kletti Jr.

While users are turning to Ethernet switching to meet today's network bandwidth needs, they are demanding that hub vendors provide clear upgrade paths to higher-speed technology. With this in mind, several hub vendors have recently introduced products pushing 100M bit/sec., or "fast," Ethernet as an interim step to Asynchronous Transfer Mode (ATM).

"We're very interested in Ethernet switching and 'fast' Ethernet and then, maybe later, ATM," said Thomas Casey, director of information technology at *Forbes* magazine in New York, which uses SynOptics Communications, Inc. hubs.

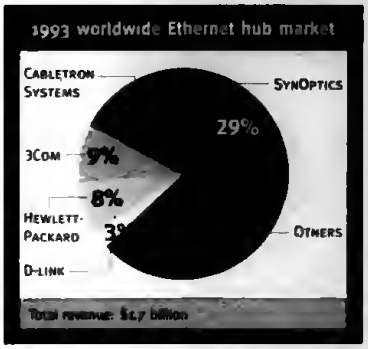
In the meantime

"LANs are throbbing at the moment, and users need something to turbocharge them," said Tam Dell'Oro, an analyst at Dataquest, Inc. in San Jose, Calif. Regular Ethernet "will provide the extra capacity to carry them through the next two to three years until ATM is viable." After that, 100M bit/sec. and full-duplex Ethernet switching products could get customers through at least the next five years.

Vendors are responding.

Chipcom Corp. recently announced it will acquire hub vendor David Systems, Inc. in Sunnyvale, Calif., for $14 million to boost its presence in the 100M bit/sec. Ethernet and stackable Ethernet hub markets.

Chipcom plans to ship a stand-alone 100M bit/sec. Ethernet switching hub in the first half of next year. The hub will be based on technology acquired from David Systems, and network interface modules for its Oncore line of intelligent hubs will follow, said Robert Sadavas, senior vice president and chief financial officer at Chipcom in Southboro, Mass.



Source: Dataquest, Inc., San Jose, Calif.

Alantec, Inc. in San Jose recently announced its next-generation hub platform, the PowerHub 7000. The 7000 is scalable from five to 20 slots and provides up to 3.2G bit/sec. of backplane bandwidth. It can also support up to 240 Ethernet and 16 Fiber Distributed Data Interface segments. Alantec plans to ship full-duplex 100M bit/sec. Ethernet modules next year, followed by 155M bit/sec. ATM modules. Pricing starts at $19,410.

SynOptics, in Santa Clara, Calif., recently confirmed plans to ship 100M bit/sec. Ethernet and ATM modules for its Lattis System 5000 intelligent hubs by the end of the year. Pricing will range from $300 to $600 per port.

Hewlett-Packard Co., meanwhile, said it will ship in October a 15-port 100VG-AnyLan hub module for its AdvanceStack hub family at a price of $3,750.

For some users, the basic capabilities of today's switching products may be enough to meet their needs for a long time.

"Once you get switching and virtual LANs set up, you don't need high bandwidth because everyone gets dedicated bandwidth. And today's speeds are probably enough — unless you get stuck in the multimedia quagmire, and then you'll need ATM," said David Pinkard, a technical consultant at Mallinckrodt Medical, Inc. in St. Louis.

Residual values

CONTINUED FROM PAGE 1

Residual value is the remaining worth of a mainframe either after a lease expires or when a previously purchased machine is put on the used market. In a lease contract, the amount of residual value determines how much of the full system price the customer will pay and also has an impact on the interest rate.

Until now, residual value has been the second most important thing to consider next to the monthly lease payment, noted Wayne Pattison, director of data center operations at Kansas City Southern Railway Co. in Missouri. But the lower prices promised by CMOS-based systems should change that, he said.

"When you're comparing $1 million to $15 million, then 10% or 15% or 20% residual value becomes rather insignificant," Pattison said. He added that the expected changes "give you a lot more reasons to buy than there are to lease. I think a lot of places that used to lease are going to be buying."

New purchase approach

Other information systems executives and analysts agreed that the diminishing of residual values would trigger some significant changes in the way users approach mainframe purchases. For example, most leases would likely max out at three years vs. the four- or five-year lengths that are available now.

With little or no residual value, leases would tend to lean toward full payouts, turning them more into pure financing deals. As a result, monthly payments would be higher than if residual values were still a larger factor, although the ongoing decline in mainframe pricing should produce much lower costs overall than customers pay today.

Users also might be able to get lower financing themselves, making it more attractive to simply purchase a mainframe outright.

"You're not going to get some of the savings you realized in previous [leasing] deals when lessors were more aggressive" with residual values, said Paul Quade, director of capital planning and resource management at Galileo International, a computer reservation firm in Englewood, Colo.

"Before, [leasing companies] were willing to leave 15% to 20% of residual value," meaning that a customer had to pay only about 80% of the actual cost of a mainframe, Quade added. With CMOS technology, the residual value "probably will be less than 5%, and it's a much lower cost for the system to start with. So residual value becomes a less predominant factor."

Three-year itch

Dave Harmon, president of El Camino Resources Ltd., a Woodland Hills, Calif., leasing vendor, said CMOS-based mainframes will still retain some value at the end of a three-year lease. But with product life cycles not expected to be much longer than those three years, "residual values on that equipment will decline rather rapidly," he added.

"Residuals almost become moot," said Carl Greiner, an analyst at Meta Group, Inc. in Westport, Conn. "When you think of future 390s, you have to think of it more like a PC. You'll keep the old stuff so long as it's productive and working for you. It's much more realistic from a user standpoint."

Still, not everyone is counting residual values out.

Ira Woolwich, assistant vice president for leasing products at Comdisco, Inc. in Rosemont, Ill., said too much is unknown about the CMOS transition to be sure of its impact. But Comdisco is "not leaving as much money on a three-year [leasing] deal" because the useful life of mainframes is already shortening, he added.

End of the line

Model	[illegible]	January 1995 Residual Value	January 1998 Residual Value
9021-711	$5.1 million*	29%	Salvage
9021-820	$17 million	17%	Salvage
9021-982	$31.5 million*	29%	3%

Source: International Data Corp., Framingham, Mass.

Charlie Burns, an analyst at Gartner Group, Inc. in Stamford, Conn., said residual values could still have a role "when you consider that you may be buying considerably more MIPS than you used to" under the parallel approach.

But if prices go down to about $10,000 per MIPS by 1996 as expected, most systems could be treated in a more cavalier fashion as they reach the end of their usefulness, he added.

That would fit with IBM's goal of making the mainframe into more of a server-class system, Burns noted. "They want people to think of the [CMOS-based systems] as little-ticket items rather than big-ticket items because that's the way most people buy products these days."

The incredible shrinking lease

Mainframe customers are not the only ones who will be affected by the downhill slide of residual values. Leasing companies also face changes in the way they do business, according to both analysts and leasing industry executives.

The leasing business is not likely to disappear anytime soon, but profit margins will shrink as leases become shorter and are made to "reflect the useful life of equipment rather than the economic life," said Carl Greiner, an analyst at Meta Group, Inc. in Westport, Conn.

Greg Carroll, president of the Computer Dealers & Lessors Association in Washington, said margins are also feeling the impact of reductions in the dollar value of leases as lower hardware costs and a higher emphasis on client/server and PC leases take their toll.

The average lease transaction has dropped from more than $200,000 to under $100,000 as leasing vendors turn to PCs to make up for declining mainframe demand, Carroll said. "That puts a lot of [cost] pressure on the back-office and IS people" at the leasing companies, he noted.

—Craig Stedman

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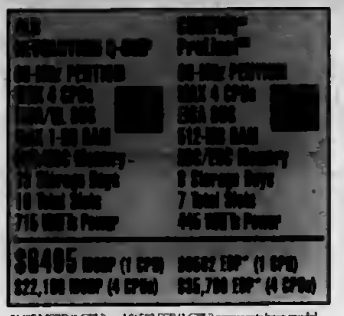

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$6495 MSRP (1 CPU) and $6582 ESP (1 CPU) represents base model price. $22,100 MSRP (4 CPUs) and $35,700 ESP (4 CPUs) represents a system configuration consisting of 64-MB RAM, 2-GB SCSI ARRAY (4 x 540-MB HD) CD-Rom and Microsoft® Windows NT™. *ESP (estimated street price) quoted by authorized Compaq® reseller VAX MIPS based on Dhrystone 2.1.

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Briefs

EDS reports growth

Electronic Data Systems Corp. posted a 12% increase in revenue to $2.33 billion from $2.09 billion in the same quarter last year. Income for the quarter rose 11% to $197.3 million from $178.1 million in the same period a year ago.

Gupta plan cuts risks

Gupta Corp. has adopted a shareholders' rights plan. The rights, payable to shareholders on Aug. 18, seek to shield stock owners "from the abusive and coercive tactics that are often prevalent in attempted takeovers," Gupta said.

Polar project frozen

Intel Corp. and VLSI Technology, Inc. will not extend a joint development agreement signed in 1992 to build chip sets for the handheld market. They did build a 386-class chip set called Polar, but it did not support Microsoft Corp.'s WinPad operating system effectively. Intel will also sell its interests in VLSI.

Intuit reports loss

Intuit, Inc. reported a $8.6 million loss for its third quarter ended June 30, which it said was related in part to its merger with Chipsoft. Revenue was $32.6 million, up from $21.8 million for the same period last year.

CA gets court date

A Sept. 2 court date has been scheduled for Computer Associates International, Inc.'s breach-of-contract lawsuit against Baan International B.V., a Netherlands-based manufacturing software developer. CA is expected to file an injunction preventing Baan from terminating its remarketing agreement with The ASK Group, Inc., which CA acquired in June. ASK had licensed Baan's Triton manufacturing software source code and remarketed it for the past five years under the product name Manan/X.

Sterling attempts KnowledgeWare rescue

By Melinda-Carol Ballou

Financially reeling KnowledgeWare, Inc. last week sought relief through a merger with Sterling Software, Inc.

The acquisition unites the Atlanta-based computer-aided software engineering (CASE) and client/server tools vendor with Sterling, a $400 million software company that is well-established in the high-end electronic commerce, systems management, testing and services arenas.

Sterling officials said they hope to reach into new client/server areas and other markets with the acquisition.

Officials from both companies said product support would not change.

Industry analysts said Sterling's deep pockets may provide KnowledgeWare with the critical resources it desperately needs to stay afloat.

"KnowledgeWare was teetering on bankruptcy and clearly needed help quickly," said Judith Hurwitz, president of Hurwitz Consulting, Inc., a consulting firm in Watertown, Mass.

Down to business

But Sterling will have its work cut out for it.

"They have a lot to learn both about KnowledgeWare and this area of the tools market," Horwitz said. "Sterling moved out of the mainframe world through acquisitions [that it] treats at arm's length."

Perhaps the most important thing that Sterling must do is create a clear and immediate direction for KnowledgeWare, applying an artful scalpel to products and employees, analysts said.

According to Ed Acly, an analyst at International Data Corp. in Framingham, Mass., ineffective management and multiple acquisitions by KnowledgeWare in the past two years overextended the company and confused its established customer base. Sterling must now forge a strategy that combines the best of KnowledgeWare's CASE tools with its client/server tools strategy, he said.

KnowledgeWare is expected to announce a significant pretax loss later this month of approximately $2.5 million on fourth-quarter revenue of about $37 million, according to Bill Shattuck, an analyst at Montgomery Securities in San Francisco.

The company last month laid off about 250 employees, or 25% of its work force. This followed losses of about $30 million and comparable layoffs a year ago.

The status of KnowledgeWare's product set and how it will fit into Sterling's portfolio of more than 100 products will be determined in the next two months by a transition team of management from both companies. KnowledgeWare will remain in Atlanta, and the transition team will decide its structure, or the number of divisions it will comprise as a merged entity under Sterling's umbrella.

The acquisition is expected to be completed by Nov. 1, at which time KnowledgeWare Chairman and Chief Executive Officer Fran Tarkenton will become a member of Sterling's board and act only as a consultant. President Don Addington will be on the transition team, but his role after the merger is unclear.

On a roll

Sterling Software, Inc. will have acquired a total of 24 companies, including the following by Nov. 1:

Company	Revenue	Products	Date acquired
[redacted]	$200M	Services, tools, EDI	August 1985
[redacted]	$131M	Systems management	July 1993
[redacted]	$5.1M	Unix, EDI	August 1994
[redacted]	$150M	Application development tools	August 1994*

*Announced on this date; merger expected to be completed by Nov. 1

Wang ends skid, looks to next year

Late surge fuels hope of continuing roll

By Mary Brandel

For the first time in six years, Wang Laboratories, Inc. has posted a profitable fiscal year. The question now is whether the company can make money and grow at the same time.

Taking the long-term view, it looks as if Wang has a decent shot.

Such optimism is due in part to the $22.5 million in profits posted for fiscal 1994, which were not the result of cost-cutting alone.

"There is a real business here," said Rick Makoujy, an analyst at BDS Securities, Inc. in New York. Sales of Wang's workflow and imaging products "started increasing strongly toward the end of the year," he added.

Moreover, by the end of next year, Wang said it expects to be making the bulk of its revenue through Windows-based, client/server-oriented Open/Workflow and Open/Image software and related professional services.

Coming up short

But today, more than half of Wang's $855 million revenue still comes from maintaining the installed base of 30,000 VS mainframes, which are declining at a rate of 5% to 6% per year.

As a result, overall revenue is likely to shrink next year. "Even if software comes on fast, it can't make up the entire gap," said Tom Wilmott, an analyst at Aberdeen Group in Boston.

In 1994, pure software licenses of Wang's open software brought in $10 million. Wang expects to reach $40 million next year.

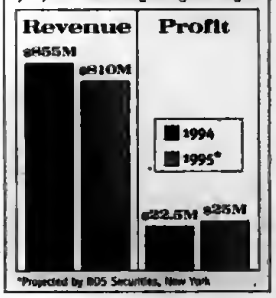
A bright spot is that half of that $10 million was garnered in the fourth quarter alone. Additionally, higher margins on software should have a positive effect on profits, Makonjy said (see chart).

It is also worth noting that professional services, including network products and services, account for more than 40% of Wang's overall revenue.

Profitability is changing users' perceptions about Wang. "People now feel safe about bringing Wang into an evaluation," said Tom Koulopolos, an analyst at Delphi Consulting in Boston.

Shifting sands

A shift to software sales at Wang won't offset projected revenue declines in its VS hardware and maintenance next year, but it will bring in higher margins



*Projected by BDS Securities, New York

But Wang's chosen market, work management, which includes imaging, workflow and document management, is fraught with peril. For example, sales cycles are typically six to eight months. And while interest in workflow is high, "there's not a lot of enterprise workflow going on," Koulopolos said, adding that enterprise workflow is Wang's niche.

So far, Wang has sold more than 200 licenses of Open/Image and more than 30 of Open/Workflow, which started shipping this spring. "They can do $50 million to $60 million on [Open/Workflow] in the next 12 months," Wilmott said.

Analysts said Wang is on the right track. It is pouring $25 million into software development, and a recent reorganization is supposed to help it sell more software.

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Raiding the nest

Flemish Renaissance painter Pieter Brueghel possessed great wit as well as insight into our foible-laden human condition.

One of my favorite works is his canvas of a simple-looking lad standing beneath a tree and pointing to a bird's nest, smiling smugly with the knowledge of the whereabouts of the nest and its eggs. Meanwhile, a more shrewd lad has climbed out on the limb above and is stealing the eggs.

The sardonic message in that painting recently came to mind as I listened to a very distinguished panel at Object World debate the future of object technology. The panel included luminaries such as Philippe Kahn of Borland, Steve Jobs of Next, Joseph Guglielmi of Taligent and others.

The panel used a good part of the time to bash the object technology efforts of Microsoft, which declined to send a high-ranking representative to the summit. The panel chided Microsoft for not taking a more active role in the standards efforts of the Object Management Group (OMG). Panelists charged that Microsoft's object-technology salient, OLE, is not object-oriented. Microsoft, they said, has shackled itself and its future to a Windows environment from which there is no comfortable migration path to the object world of tomorrow.

Meanwhile, Microsoft has coaxed the development of some 100-plus applications for OLE, despite questions about the interoperability of OLE-enabled applications outside a pure Microsoft environment. It is also preparing to sell 30 million copies of Chicago next year. It's stealing the eggs.

Talk at Object World makes it pretty clear that the distance between Microsoft and the rest of the object world is getting wider, if anything. The rest of the world is uniting to some degree around the OMG's CORBA standard.

Rather than pressing for a single object standard, the industry is trying to work out guidelines for interoperability between OLE and CORBA. Corporate developers desperately want and need these guidelines.

But they shouldn't hold their breath. A recently demonstrated Microsoft specification for creating multiplatform OLE applications fell far short of expectations for interoperability guidelines. In other words, no clear standard for interoperating between OLE and CORBA will appear soon.

With Microsoft feeling flush after slipping out of the noose of the U.S. Department of Justice, its desire to partner and thereby promote the non-Microsoft object world may not be great.

Maybe the industry can shake Henry Kissinger out of retirement to intervene and bring the OMG and Microsoft camps closer to center. Barring that unlikelihood, users will continue to see the benefits of object technology pushed further and further out, to no one's benefit.

Bill Laberis

Bill Laberis, *Editor in Chief*
Internet: *blaberis@cw.com*

Rich Tennant is on sabbatical. This is one of his classic cartoons from 1991.

Clipper won't protect privacy

Dorothy L. Denning's defense of Clipper technology ["Key escrow scheme protects personal, national security," CW, July 25] is troublesome and unconvincing. The labrynthine legal and technological barriers she says government officials must overcome to legally wiretap private communications do little to protect against an intentional abuse of power. A corrupt official of sufficient rank can defeat all measures designed to keep him out of others' private affairs.

Furthermore, Denning fails to even acknowledge the almost certain stigmatization and victimization of those who publicly exercise their legal right to encrypt with non-Clipper algorithms. The government's Clipper agenda represents a fundamental breach of every American's constitutional right to free and private communications.

Ryan Wilson
Portland, Ore.

Plenty of support behind APPN

Your assertions that APPN is still-born ["APPN seen headed for obsolescence," CW, July 18] ignores the same old issues that have always been at the heart of the war between SNA and TCP/IP. For 20 years, SNA has beaten TCP/IP in virtually every commercial shop that needs consistent response times and reliable network service. Advanced Peer-to-Peer Networking is a leap beyond SNA.

As for vendor support for APPN, the APPN Implementor's Workshop has for some time been well attended by virtually every networking vendor on the planet. The suggestion that IBM is playing down APPN is absurd.

I too saw Ellen Hancock's presentation at the Boston APPN conference, and I saw APPN as the underlying theme in most of it. IBM seems tired of trying to educate the market and is now focusing more on selling the message. Makes sense to me.

It is true that APPN is not the answer to everyone's prayers, but users are looking for a smooth migration out of the old dumb terminal networks into a technology that will position them for the future. TCP/IP is a revolution for most SNA users while APPN is an evolution. I know where I'll put my money.

Terrence Bishop
Boulder, Colo.

I believe two points from "APPN seen headed for obsolescence" need clarification.

First, high-performance routing is a key enhancement to APPN, not a replacement. It allows routers and other intermediate nodes to provide APPN's class of service, reliability characteristics and proven superior performance.

Second, the Broadband Networking Services architecture is an important part of IBM's implementation of ATM and will directly benefit APPN users when they implement ATM.

IBM is clearly committed to enhancing the value of and extending the reach of APPN, and we believe that APPN will help our customers as they move toward the high-speed networks of tomorrow.

Steve Joyce
Senior manager, APPC Market Enablement, IBM Research Triangle Park, N.C.

Off the mark

The site of Cray Research's Chippewa Falls laboratory is indeed about 100 miles east of Eagan, Minn., as identified in "Cray 4 stakes: Ultimate risk, reward" [CW, July 18]. I am happy to report, however, that that would make the state Wisconsin, not Minnesota.

Few people seem to realize that Seymour Cray was a Wisconsin product who chose to locate the lab in the place of his birth — Chippewa Falls, Wis.

Chris M. Rosswalt
Chapel Hill, N.C.

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Dogs days for old-timers

Michael B. Cohn

Cobol is dead. The golden age of mainframe programming is history. What was legendary is now legacy. What was assembled is now assaulted. What was housed in glass is now scattered among servers, CD-ROMs and who knows what else.

And with this demise, so too go the veterans of the central-processing '70s. Old-timers of 20 and 30 years are packing up their cubicles. Lifelongcoders are calling it quits. Graybeards who've dedicated decades to data processing no longer feel needed. And we who remain should not turn our backs. The emotional exodus of IS expertise should not go unnoticed. This is an unthinkable event in the history of high tech, and someone needs to say something about it ... and it may as well be me. You know what I say? I say good riddance. Good riddance to all those aging, whining glasshouse gladiators. Out with the old and in with the new, that's what I say. Hold a luncheon, give them gold watches, and tell them to hit the road.

Who needs them? These people had no idea how to run their shops in the first place. They were inefficient. They worked all kinds of hours. I can't help but wonder how much time, money and effort was overkill and inexperience. Could they have achieved the same results with much less effort? Then again, I wonder the same thing about the three dates I had in high school.

Frankly, I'm fed up with all their complaints about how IS isn't the same anymore, about how there's no loyalty or security and how it isn't fun. Hey folks, it's not supposed to be fun. We don't run around the computer room making X-and-O Mr. Spock printouts like they did in the old days. We bust our butts; we work eight days a week. That's because we're either contributing to the life-and-death struggle of corporate survival or fixing a "nested-if" some old fogey screwed up in '73.

So if you're an old IS'er, here's the bottom line: We don't owe you anything. There's no prize in corporate America just because you spent night after night figuring out why there were low values in Register 14. You were helpless then; you used old technology. You're a fish out of water today. You don't have a clue about client/server, and you wouldn't recognize an object if it bit you in the jowl.

Why you probably still think it's better to methodically "do it right the first time." Well, I've got news for you. Thanks to today's RAD technology, it's faster and cheaper to "do it wrong" a bunch of times and then do it right. At least I hope so because we've got "doing it wrong" down to a science. In any event, if high tech's four-decade folks are hanging it up, I say let them go. Even better, let's just clean house. Get rid of everyone who started in the sixties, can read a dump, still believes in program documentation or has punch cards hidden in their desk. It really is better for everyone. These folks are old. They're tired. Unix would just confuse them. Send them off to play with their grandkids.

Let's move on. No mushy accolades; no teary eyes for their service to management, corporation and country. It's time for the young and strong — the next generation. I've come to bury the old-timers and certainly not praise them. I'm glad they left. I've got a bigger cubicle now, and I park closer to the lobby. My guess is in a few weeks no one will even know they're gone. I say we're better off without them unless ... God forbid, the system goes down.

Cohn hopes his large, high-tech employer keeps him around long enough to become an old-timer. His new humor book, *Fear of Computers*, is now available.

OS/2, an intriguing alternative

John Gantz

Every time one of my software vendor contacts tells me his company has a product better than Microsoft's, I offer my standard response: "That's great! How big is your ad budget?"

I'm convinced that gaining market share over Microsoft requires products that are not only better but that don't compete at all. Taking on a company with a bigger ad budget than the total revenue of 90% of all other software firms requires no small amount of nerve.

Which brings us to OS/2. Just over a year ago, I wrote that OS/2 faced the possibility of becoming an orphan — meaning IBM's hardware arm, the IBM PC Co., didn't need OS/2 as much as it needed Windows or NT to sell its boxes. I said that somewhere along the line, IBM's top brass would ask whether the gazillions of dollars spent on operating system development would be worth it.

Since then, Lou Gerstner has stepped in and said IBM *will* continue to invest in OS/2, and the PC Co. *will* sell computers based on PowerPC and future versions of OS/2. It ain't gonna be no orphan. In fact, at PC Expo, the head of IBM outlined the future direction of OS/2, or IBM's "Workplace Strategy."

That strategy is actually quite compelling and fairly elegant. It relies on dovetailing the development of an OS/2 microkernel and layering various operating system personalities on top that let a system run applications developed for DOS, Windows, OS/2 2.x, AIX and OS/400, among others. It will support the Taligent object frameworks and — someday — object-oriented components in the kernel.

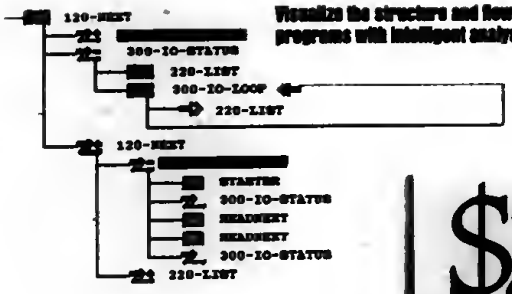
The company has already taken the first step in this journey to workplace nirvana — beta kits of the OS/2 microkernel product are out there now. A full microkernel-based product, OS/2 for the PowerPC, should ship by year's end. From there it's a short step to the end of the decade and the building of operating systems by plugging various object-based components together like Legos, right? Actually, maybe it is.

My problem is the time needed to implement the strategy. By the time PowerPC is shipping millions of units, probably 10 million units of Chicago will be out, and Cairo will appear in the news enough to create confusion in the market. By the time IBM's Workplace Strategy is half in place, Chicago will be on 50 million machines, and Microsoft's ad budget may be bigger than OS/2.

Here's what this means for IS managers and software developers. The functionality and portability promised in IBM's future products will be sufficiently compelling to make abandoning OS/2 and other IBM platforms ill-conceived. The marketplace presence of Microsoft operating systems will mean that standardizing on OS/2 and other IBM operating system "personalities" would also be ill-conceived.

So plan on gaining leverage by supporting and investing in both as much as you might have in IBM, Control Data and Digital operating systems in the same mainframe IS organization. IBM is betting a good bit of its company on the Workplace Strategy, and if it wins, you'll want to be there. If it doesn't win, you still will not have lost as much as you might have gained.

Gantz is senior vice president at International Data Corp. in Framingham, Mass. He is responsible for all research and consulting in desktop automation and workgroup and office computing.



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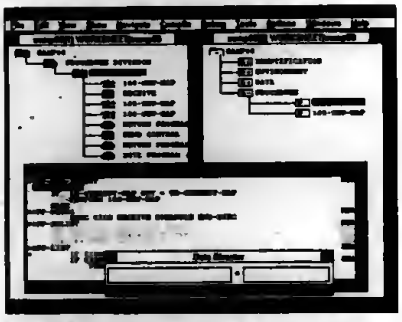

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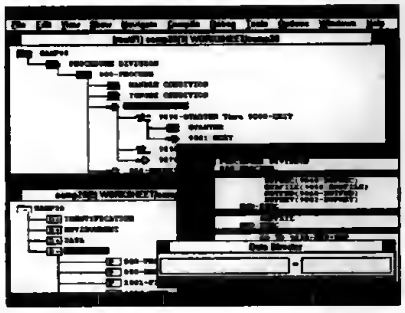

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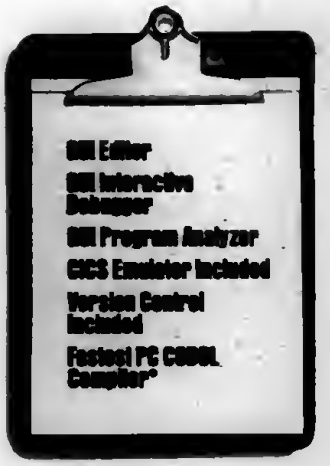

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Help on the way for complex applications

Abundance of features creates need for training

By William Brandel

Windows applications — clad in a plethora of bells and whistles — can be very complex, even with a graphical user interface. With the arrival of powerful and innovative technologies such as Microsoft Corp.'s Chicago operating system and Object Linking and Embedding 2.0, software vendors will be able to deliver more features that take advantage of those new technologies.

This is not necessarily good news for users.

"Applications already suffer from a disease called featuritis," said Donald Norman, professor emeritus of cognitive sciences at the University of California at San Diego and a fellow at Apple Computer, Inc. "All these excess features just complicate the use of the system."

Possible solutions

In an effort to mitigate some of the feature shock that end users have experienced, vendors say they are addressing the problem by offering new features and loading new help and training facilities into their applications. Their approaches can be divided into two camps.

The first approach, which addresses task automation, is in the form of "easy-to-use" help buttons. These are buttons such as "Wizards" in Microsoft's Access 2.0 or "QuickTasks" in WordPerfect Corp.'s yet to be delivered PerfectOffice, which automate certain tasks.

However, what holds the most promise in software training is just-in-time training, said Carter Lusher, an analyst at Gartner Group, Inc., a consultancy in Stamford, Conn.

Vendors such as Microsoft and Blue Sky Software have already deployed in-application training features in their latest generation of desktop products, Lusher said. For example, Microsoft's Office has a technical-tips feature that helps end users find information on certain tasks by pushing the help button. This button presents a menu that end users can scroll through to find information on the task they are trying to accomplish.

Lusher said end users who use these dynamic links in addition to multimedia technology will have access to demonstrations that will "walk" them through specific tasks. This, he said, may hold the best potential for training end users to use software applications effectively.

For example, Lotus Development Corp. is taking just-in-time training a step further in its SmartSuite 3.0 application suite. SmartSuite 3.0 will offer features for users to set up "how-to" movies using Lotus' ScreenCam application. By clicking a button, users can learn how to use certain functions in say, 1-2-3, that the company's information systems department has set up. Lotus also offers guided tours with an animated "magician" who explains and demonstrates how different Lotus suite applications work with one another.

> "The bottom line is that multimedia-based help will take some of the burden off of an overtaxed support organization."
>
> —*Carter Lusher, Analyst, Gartner Group*

"The bottom line is that multimedia-based help will take some of the burden off of an overtaxed support organization," Lusher said. Furthermore, the software may encourage end users to exploit tools that are being loaded into applications and, as a result, teach users how to use the applications, he said.

However, these technical tips are sometimes viewed as uninformative minimarketing attempts by vendors to push features that end users are having trouble using. Many technical tips are just that: tips too technical for average users to understand.

"Potentially, this on-line training could be great," said Priscilla Tate, executive director at Technology Managers Forum, Inc., a user group in New York. "But often an end user will get guidance on how to use a cell or use disinheritance, and [he] has no idea what these are. These are only as useful to the degree that the end user can understand it."

Breaking away from tradition

While the jury is still out on just-in-time training until users get a chance to use it, it is clear that traditional training methods are not working. According to Gartner studies, end users now retain only 10% of their training over a 30-day period, Lusher said.

"If people don't retain this training, they then need some other form of assistance to use PCs," Lusher said. "Most learning is from casual use at the keyboard. So anything that increases their knowledge will be seen as a net positive by IS."

Sea-Land finds gateway to excellence through automation

Re-engineering cuts costs by $124M

By Thomas Hoffman
ELIZABETH, N.J.

In the highly competitive shipping industry where carrier rates are strictly regulated by international tariffs, efficiency and customer service separate the men from the boys. Seizing upon this trend in the late 1980s, Sea-Land Service, Inc.'s upper management called upon its information technology and business units to work together to improve the company's productivity.

To date, the results have been impressive. In 1989, the $3.25 billion unit of CSX Corp. began automating overseas terminal operations using Digital Equipment Corp. VAX-based systems. Relying on these terminal automation system (TAS) projects as guides, Liberty Corner, N.J.-based Sea-Land has nearly completed a $1 million effort to automate its Port of Charleston, S.C., facility, which the company plans to use as a benchmark for 17 other ports over the next four years. The TAS model features Fujitsu America, Inc.'s handheld terminals, Microsoft Corp.'s Windows NT, Windows NT Advanced Server and SQL Server and AT&T Global Information Solutions' workstations and servers.

Sea-Land's Richard M. Cerwonka *(left) and Edward F. Tuosto say terminal automation has reduced the company's operating costs and boosted productivity*

The terminal system revamp was part of a series of company-wide re-engineering projects that helped Sea-Land reduce its expenses by $124 million last year. "Sea-Land has done a spectacular job reducing its operating costs and expenses," noted Graeme Anne Lidgerwood, a transportation analyst at CS First Boston Corp. in New York.

"When you carry freight over water, everything culminates in the terminals so the terminals play a critical role in carrier productivity," said Richard M. Cerwonka, director of terminal operations services at Sea-Land located here.

Indeed, the shipping industry has experienced dramatic upheavals in recent years as competitors such as Sea-Land, Maersk Line

Sea-Land, *page 42*

On Site

Sea-Land Service, Inc.
Liberty Corner, N.J.

Challenge: To increase efficiency of cargo terminal operations.

Technology: Fujitsu's handheld terminals, AT&T Global Information Solutions' workstations, Microsoft's Windows NT and SQL Server.

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Compaq wades into enterprise pool

By Jaikumar Vijayan

■ With Compaq Computer Corp. seemingly on course to assume leadership of the desktop market before its target date of 1996, observers and users are beginning to watch the company's attempts to position itself as an enterprise vendor with growing interest.

For the second straight quarter, the company has shipped more desktop units than the IBM PC Co. and Apple Computer, Inc. [CW, Aug 1] and could end the year leading the desktop segment, according to some analysts. While this by itself is fairly predictable given Compaq's performance in the past few quarters, the vendor's growing installed base could give it a platform to push itself into the information systems glass house, some analysts predicted.

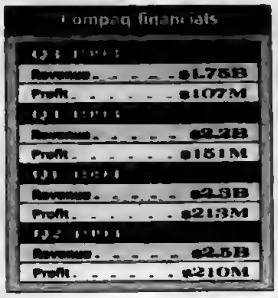
"You get in cheap, and you work your way up" into the enterprise, said James Greene, an analyst at BIS Strategic Decisions in Norwell, Mass., commenting on Compaq's strategy. According to Greene, Compaq is trying to leverage its position in the desktop market to project itself as a serious "computer vendor" with serious IS aspirations.

That effort is increasingly being endorsed by at least some Compaq users.

"Compaq's performance so far confirms that our decision to go with the company was a good one," said Robert Haas, manager of corporate IS at Interco, Inc. in St. Louis. Haas, who used IBM systems before switching to Compaq as a primary vendor, said he was watching closely to see what Compaq would do in the enterprise.

Compaq is being careful not to overstate its position. Despite the company's performance so far this year, Compaq officials are not revising their estimate of 1996 as the year they will emerge as leader of the desktop marketplace. While it wants to be taken seriously as an enterprise vendor, Compaq acknowledges that it is not quite ready for mission-critical environments — yet.

"We definitely don't want to mislead our customers. The key challenge is one of establishing our credibility" in the enterprise, said Gian Carlone Bisone, Compaq's vice president of North American operations. "We want to show our customers that we are responsive to market needs and willing to take accountability" in higher-end IS environments, too, Bisone said.



Strategic moves

To do this, Compaq is putting into place an elaborate strategy involving partnerships and alliances with several key application software, operating system and database vendors during the next few months and years, Bisone said, citing Compaq's recent tie-up with Oracle Corp. as an example of what Compaq plans to do in the enterprise.

At least one user said Compaq may already have the credentials to address enterprisewide and even mission-critical environments.

"We run all our applications on Compaq systems, so to that extent Compaq is already handling mission-critical applications" in a client/server environment, said John Glaser, vice president of IS at Brigham and Women's Hospital in Boston. The hospital has more than 2,500 clients booked onto about 50 servers — mostly from Compaq — in one of the largest client/server implementations of its kind anywhere, according to Glaser.

Some users, like Sean Ho, a senior microsystems analyst at Allergan, Inc. in Irvine, Calif., predict Compaq will need more than Intel Corp. architecture to carry it in mission-critical environments. "One of the biggest drawbacks Compaq will have here is its emphasis on Intel architecture," Ho said, adding that Compaq will have to offer RISC and Unix-based systems to interest IS.

Bisone, however, said he believes the Intel architecture will have enough horsepower to carry Compaq in the enterprise, though he acknowledged that Compaq is considering other architectures as well.

Despite Compaq's success on the desktop, some analysts caution that the vendor may not be entirely ready to move into the IS glass house just yet, especially as far as technical support issues are concerned.

"I think Compaq is going to get hurt by entering markets they are not quite technically prepared for yet," said Jennifer Munson, an analyst at WorkGroup Technologies, Inc. in Hampton, N.H.

According to Munson, as Compaq increasingly moves into traditional RISC and Unix environments, it could find itself getting stretched for customer support in unfamiliar territory.

"Compaq could get hurt by their own vision," she said.

Michael Fitzgerald

Fall preview

Products push the PC industry forward, and nothing primes the product pump like preparation for fall. Some early lines on the autumnal product equinox in the mobile world, as whispered by my industry juice jockeys:

- Zenith Data Systems will release in September a notebook computer that can run Intel chips or PowerPC chips, according to sources near Zenith. Likely to be announced as an Intel-based product with the option of running PowerPC chips (and to be scalable in both worlds), the Zenith Data notebook will include Business Audio, a base configuration of 16M bytes of RAM and 340M bytes of hard disk storage. Its PowerPC processor will run Microsoft's Windows NT initially.
- OS/2 will soon get a boost in the portable market when Toshiba America Information Systems announces support for the operating system across its entire portable product line. Sources close to the companies say IBM and Toshiba have been working on optimizing code so it will run on subnotebooks on up. But don't expect to see Toshiba bundling OS/2, at least not at first, the sources say.
- Those annoying AC adapter bricks that come with notebook computers may soon be just an unpleasant memory. Michael Winkler, Toshiba's general manager, says several power cord makers have told Toshiba they believe they can build new power cords with built-in AC capability by fall. They also claim the power cord won't look like a snake that has swallowed a rat. Time will tell.
- NEC Technologies is preparing a slow death for its Versa E line, sources say. The recently announced Versa V will fill in the low end of the premium line, to be followed by the Versa M, a high-end notebook that looks to be the first with 24-bit color. In addition to 24-bit color, the M (for multimedia) has TV reception capability and stereo sound. It also will have Cellular Digital Packet Data capability and a new, brighter 9-in. screen, sources briefed by NEC say.
- Panasonic Personal Computer will ship a notebook computer with a full-size built-in CD-ROM drive in the fall, according to one source briefed by Panasonic officials. Panasonic currently ships notebooks that support a 3½-in. CD-ROM. The prototype shown by Panasonic has a flip-up keyboard with a standard 5¼-in. CD-ROM drive underneath. The system is due in September or October.
- Sources at Chaplet Systems, Inc., a Taiwanese notebook vendor that has made systems for CompuAdd U.S.A., said the company expects Leading Edge will relabel Chaplet's notebook line, including the 3.3-pound Ilufa 350 super-subnotebook in an exclusive deal [CW, June 27]. But a source at Leading Edge, who confirmed talks with Chaplet, said it is "leaning in another direction."

Fitzgerald is *Computerworld*'s senior editor, mobile computing.

Microsoft says Access isn't source of problems

By Melinda-Carol Ballou

Microsoft Corp. officials said the company's Access database is not responsible for data corruption issues experienced by some users. The problem, the officials said, occurs only when Access is used with both Microsoft's Windows for Workgroups and SCSI disk drives.

Several users said they experienced data corruption while using Microsoft's Access database [CW, July 11].

To solve the problem, Microsoft officials suggested that users change the disk setting to double buffering or remove the disk SCSI drives when using Access with Windows for Workgroups.

Developers and industry analysts, however, were not necessarily reassured.

"There was definitely a problem they didn't tell us about, and I was fit to be tied. If they told me all I needed to do was move to a different disk, in 10 minutes I would have solved a month of headaches," said Victor Le Hotay, a consultant at CompuTrade Software Development, Inc., a Toronto-based company that is developing a foreign exchange trading package.

"This is a known problem with Windows for Workgroups [when the application] heavily accesses a SCSI drive," said Libby Johnson-McKee, product manager for Access at Microsoft.

Johnson-McKee said Microsoft support tried to respond quickly to Le Hotay, who contacted them about the problem at the beginning of July.

Identified in tests

The problems were discovered during testing by Microsoft for the release of Access 2.0. Microsoft's testing group even published a paper on the subject.

"It's their company. They should get Access to work well with Windows for Workgroups, and if it doesn't, they should put on the Access box that the products don't work well together," said Rich Finkelstein, president of Performance Computing, Inc., a Chicago-based consulting firm.

"It's one thing when one vendor blames another vendor, and it's another when they blame themselves," he said.

Sea-Land

CONTINUED FROM PAGE 39

and American President Line have shifted to cooperative vessel-sharing agreements. The influx of vessel-sharing agreements means more cargo is being handled.

For example, in the past three years, employees at Sea-Land's Port of Charleston terminal have watched its daily truck traffic double, said Carl Pitts, the gate supervisor at the facility.

As is key with most successful re-engineering projects, Sea-Land is placing its process improvements before automation. "We didn't go in there to automate. We used automation to implement the process changes," said Edward F. Tuosto, Sea-Land's director of information technology systems.

For the Charleston TAS project, which is scheduled to be completed by year's end, Sea-Land tapped Nettech Systems, Inc., a Princeton, N.J.-based systems integrator, to help implement a radio-based communications system consisting of Fujitsu America, Inc. handheld computers that are used by Sea-Land's gate checkers and mechanics. Communications Technology for Business, a Park Ridge, N.J.-based systems integrator, helped Sea-Land install a customized Microsoft SQL Server database.

Each container that enters or leaves Sea-Land's Charleston shipyard must first be inspected for possible damage. Sea-Land clerks use the Fujitsu handheld units running Microsoft's Windows for Pen Computing to create inspection forms that the drivers sign.

In the past, these inspections were done on paper and were typed into an IBM 3270 CICS-based terminal after hours. The results were then transmitted over an IBM SNA network to a mainframe in Jacksonville, Fla. The time spent hand-counting gate moves and keying in data forced Pitts to work 70- to 80-hour workweeks.

> Sea-Land is placing its process improvements before automation

Since the TAS prototypes began running last January, all the container inspections have been entered into Sea-Land's computer system automatically using the radio frequency-based communications gateway, giving Pitts a more manageable 50- to 55-hour week.

"By being able to pull the information up on a computer, my paperwork is done in 30 minutes," Pitts said. "It all helps me get drivers out of the terminal faster so they can make more turns and more money. Plus, it speeds up ship production, which is the bottom line for our company."

Improved turnaround

Before TAS was implemented, gate moves at Sea-Land's Charleston facility took 50 to 55 minutes per driver. With TAS, most truckers are in and out of the gate in 30 minutes, Pitts said.

This fall, TAS will be used to instruct Sea-Land's drivers exactly where to pick up or drop off containers by row and slot. That will be particularly helpful in a shipyard of 3,500 containers.

TAS has received high marks from truckers and industry watchdogs who have monitored its progress.

"Sea-Land is a little bit faster than the other [terminal operators], so if I can get in more loads per day, I'm going to do more business with them," said Lawrence Robinson, owner of Robinson Trucking in Jones Island, S.C.

Although Sea-Land's computer-illiterate yard workers were leery at first about using the handheld systems, the company's information systems team simplified the mobile applications to the point where training took less than an hour per worker, Tuosto said.

"Our people used to be afraid of computers; it's only human nature," Pitts said. "But our IS staff designed the system to work around our needs. Now our people just can't believe how they ever managed to do things manually."

One organization that extolled the virtues of Sea-Land's TAS system was the Carolina Motor Carriers Association, a group of 150 customs house brokers, truckers and shippers. Phil Byrd, president of the association, said Sea-Land operations have dramatically improved since TAS was implemented.

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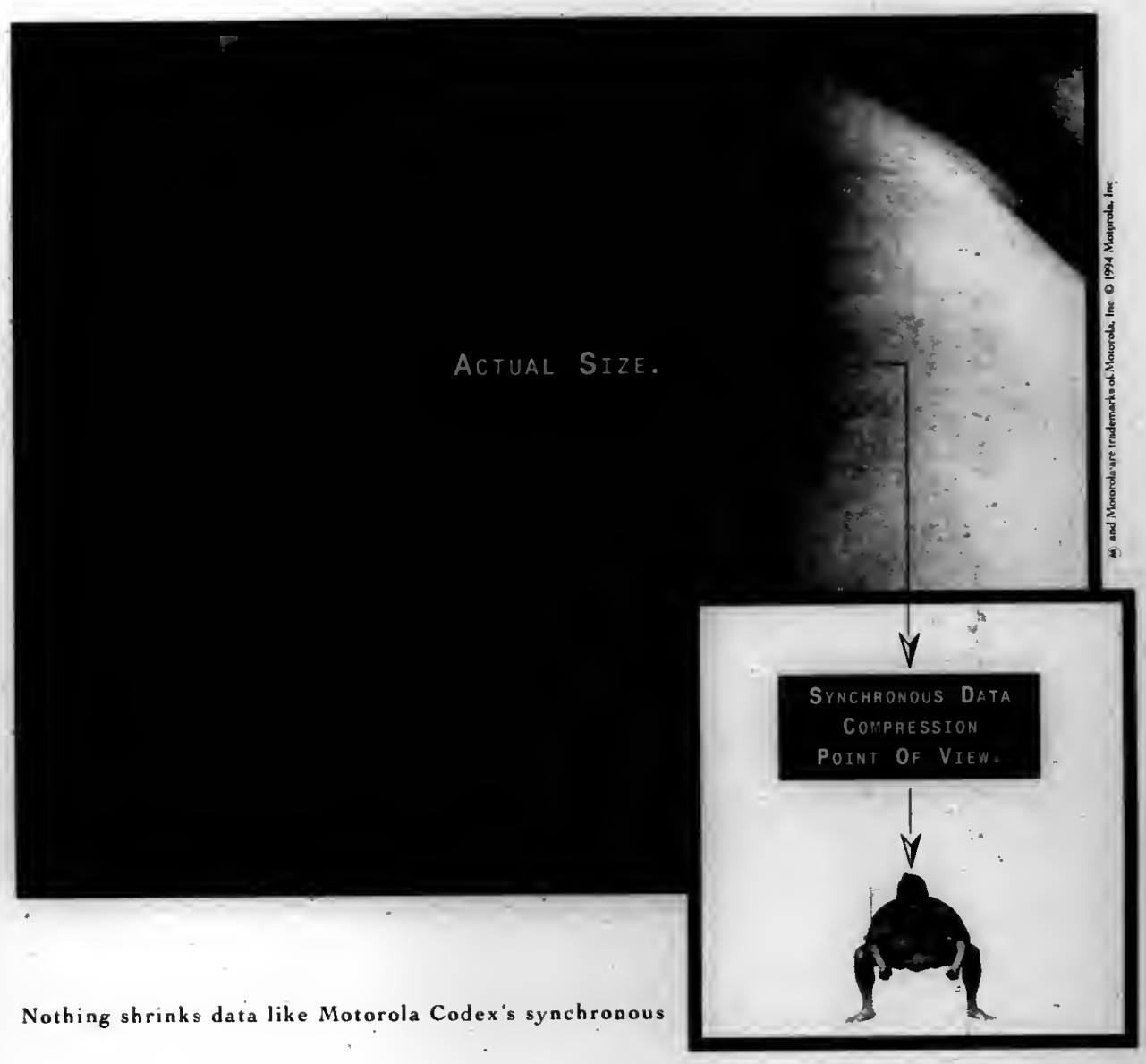

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B4 THE WALL STREET JOURNAL FRIDAY, APRIL 15, 1994

IBM Signs Production Pact With Cyrix

By BART ZIEGLER
Staff Reporter of THE WALL STREET JOURNAL

NEW YORK – International Business Machines Corp. took aim at Intel Corp.'s lucrative Pentium chip market yesterday, signing a major production pact with upstart chip maker Cyrix Corp.

The pact could offer the first unlicensed alternative in Intel's top-of-the-line Pentium at a time when Intel has fought aggressively in court and in the market to retain its control over newer-generation chips. Only two months ago IBM passed up the right to license the Pentium design from Intel, but now has embra[illegible] scrappy rival that [illegible]

The Cyrix chips, which IBM won't begin producing until year end, mimick Intel's Pentium workings without illegally copying the chip's precise circuitry, the company maintains. Intel, in suits against other clone makers, has countered that a rival chip can violate Intel patents even without directly copying Intel designs.

Cyrix Suit

Indeed, IBM may yet be pulled into the Cyrix suit. In that Intel case, a federal judge in Texas is expected to rule this summer on whether [illegible] for Cyrix [illegible]

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Groupware users find more alternatives to Notes

closer look: Groupware

By Lynda Radosevich

Lotus Development Corp.'s Notes is widely noted for leading the groupware market, but users' options are on the rise.

Groupware is a loosely defined industry name for software that permits collaborative computing. Notes includes a shared electronic workspace, security and synchronization of information across different servers and remote workers. Key groupware capabilities it lacks include meeting scheduling and support for real-time collaboration.

While Microsoft Corp., Novell, Inc. and WordPerfect Corp. are gearing up for an attack on the groupware market (see chart), a growing number of information systems managers are turning to the offerings of smaller companies.

Often, users said, these smaller vendor companies offer better support and groupware applications that are cheaper or more suited to their needs than Notes (see related story, page 50).

"With a smaller company, you may have a little delay while they are handling another company, but at the end of the day you know who you're going to talk to," said Van Muller, a general manager at PVM Oil Associates, Inc. in Teaneck, N.J. Conversely, "Microsoft will fax you a list of 60 solution providers, and you have to screen them. Lotus goes one step further in making sure that you're charged for the phone call."

PVM Oil uses Channels from Team Software, Inc. to post requests on a bulletin board and get responses from oil brokers worldwide in real time. "Notes had too many bells and whistles and just didn't have the speed," Muller said.

For BDM International, Inc. in McLean, Va., the need for real-time, collaborative meetings among a dispersed group of engineers knocked Notes out of the groupware running.

BDM International is an engineering research and development consortium that primarily supports defense contractors. The company looked at several groupware packages, including Notes, and settled on a two-pronged approach that includes an MCI Communications Corp. telephone conference and The Virtual Notebook System (VNS) from The Forefront Group, Inc. in Houston, said Roger Turner, a principal at BDM.

Engineers from a dozen member companies now have quick electronic meetings three times a week. The engineers complete research with workstation software, then enter the data into VNS' graphical electronic "notebook."

Before a meeting, Turner posts an agenda to a Unix-based VNS server hosted by a Palo Alto, Calif., member. The members call up the agenda before the meeting and can link document objects to it. During the on-line meeting, multiple members access the shared documents with VNS client software on Macintosh-es, PCs and Unix machines using the Internet for the wide-area connections. The VNS server software tracks and stores the contributions and exchanges, Turner said.

Office supply manufacturer Avery Dennison Corp. in Pasadena, Calif., is in the midst of a project to break down the "not-invented-here" syndrome and get divisions worldwide to share and use one another's work, according to Gordon

Notes, page 50

Noteworthy opponents:

In a groupware mini-debate, Lotus and its groupware rivals discuss their own and one another's strategies

Microsoft

Tom Evslin, general manager of server applications

Notes' key strengths Notes is an established conferencing product that is available today, and to date, it has had little competition.

Notes' key weaknesses No central point of administration, no central control of replication [and a] directory design that leads customers to delete the entire directory are examples that make management of a multisite Notes installation challenging. It has no central point of security and an inability to get distributed individual security keys back from users.

Microsoft's current strategy Microsoft offers integrated workgroup products today including Microsoft Mail, Schedule + group calendaring/scheduling application and the Electronic Forms Designer in addition to our leading Office suite of products, which are all messaging-enabled. This is a much broader solution than just Notes.

Microsoft's future strategy Microsoft Exchange Server will include E-mail and group scheduling and provide a rich platform for automating business tasks and processes across Windows, DOS, Macintosh and Unix platforms.

It will allow IS to manage servers centrally or on a distributed basis. Microsoft Exchange Server will work in environments running [Novell, Inc.'s] NetWare, [IBM's] LAN Manager or Banyan's Vines.

The Exchange Servers will also include a suite of management tools. Server, link and performance monitors, dynamic rerouting and dynamic load balancing are examples.

WordPerfect

Dave V. Clare, senior director of workgroup marketing

Notes' key strengths Lotus has been successful in offering an application development environment on top of a proprietary replicated database technology. Notes is good for very vertical and specific applications that require "replicated" information.

Notes' key weaknesses Notes E-mail is very limited in functionality. Lotus' CC:Mail has a different message store, directory service, transport and additional administration overhead. The Notes replicated database architecture does not offer document management version control, document checking and checkout and/or document security. Notes' architecture does not fully support calendaring and scheduling.

WordPerfect's current strategy GroupWise offers enterprisewide E-mail, cross-platform, cross-post office, calendaring and scheduling, and task management, all within the product. WordPerfect has document management with SoftSolutions and database access and electronic form design and distribution with InForms. WordPerfect supports Notes as a database with our three primary applications.

WordPerfect's future strategy Novell's GroupWise will have a gateway to Notes E-mail. InForms will act as a front end to Notes, and SoftSolutions provides document indexing and referencing to Notes objects. The simple statement is if an organization has already purchased Notes, WordPerfect will preserve and expand the investment.

Lotus' response

Tim Dempsey, director of new technology marketing

Notes is more than conferencing, E-mail and scheduling. It enables rapid development and deployment of a new class of applications for functions like sales and marketing management, product development and customer service.

Weaknesses cited by our competitors-to-be represent swipes at functionality not yet offered elsewhere: secure, distributed, compound document storage facilities deployed by individuals in organizations and between business partners.

Today, competitors offer store-and-forward messaging and messaging-enabled applications like scheduling or forms-based workflow. Other offerings, like document management, are through third parties. They appear to be building bridges to a broader set of services that appear to duplicate the services of Notes via integration of traditional RDBMS functionality. Notes offers a different data, systems and application model built upon the Notes open object store. It enables workgroups to capture and share a broad range of information (beyond text and attachments) with a broader workgroup (including mobile workers) across a broader range of platforms, both server and client. Notes applications integrate traditional relational data and messaging services, whether native Notes, CC:Mail or mail from our competitors.

Notes future strategies include becoming standard on the public network infrastructure, an effort well under way with AT&T Network Notes.

Notes system sends federal property data nationwide

By Gary H. Anthes
WASHINGTON

■ The General Services Administration has installed a property-management executive information system (EIS) built around Notes that puts gigabytes of data from legacy systems at the fingertips of agency managers around the country.

The EIS, called the Glenn Asset Management Information System (GAMIS), embodies most of the concepts that have become buzzwords in federal information systems circles in the wake of Vice President Al Gore's "reinventing government" initiative. "It is creative use of technology, uses commercial off-the-shelf software, provides timely access to legacy data and has a good look and feel," said James A. Williams, assistant commissioner for IS at the GSA's Public Building Service.

"The system is up on my PC, and I have good access to all our data," said commissioner Kenneth Kimbrough, head of the Public Building Service. He has barely begun to use GAMIS but said it will allow managers to easily do the ad hoc queries and what-if analyses that previously required costly programming or laborious manual review of printouts.

GAMIS is intended to enable the agency to better manage the government's huge inventory of real estate by giving managers snapshots of that inventory at any level of detail. "We wanted to give management quick and easy views of our assets," Williams said. "Most senior managers are visual types, and you can't just give them a printout and expect them to get a good picture."

At a PC, Williams nimbly navigated through some 4G bytes of information on 16,000 government properties worldwide. Having selected the Everett McKinley Dirksen Federal Building in Chicago, Williams clicked on one of 13 database-access buttons to see what agencies occupy it, another to see its financial data, another to retrieve a scanned photograph of the building and another to get information about its congressional district.

Williams also clicked into a geographic information system (GIS), built on MapInfo Corp. software, and drilled down through national, regional and city maps showing the location and type of government properties. He clicked on a building symbol on a street map and retrieved a complete profile of the building's vital data.

The maps can be quickly tailored for specific analyses by specifying, for example, that only Justice Department properties with more than 50,000 sq. ft. of floor space should be shown.

In the Washington region, GAMIS also includes a database of commercial properties with space available, updated monthly by a subscription service.

The data on government properties is updated using InfoPump from Trinzic Corp., a tool for filtering and moving data across dissimilar environments on a scheduled basis.

Kenneth Kimbrough *of the GSA's Public Building Service can do what-if analyses*

"This strikes me as potentially a very creative and exciting use of Notes that might be able to substantially improve the efficiency of the agency," said Tom Austin, research director for electronic workplace technologies at Gartner Group, Inc. in Stamford, Conn.

Austin applauded the GSA's use of commercial off-the-shelf software for GAMIS. "These technologies — groupware — provide the best returns with minimum investments," he said.

GAMIS runs under OS/2 on a Pentium-based Compaq Computer Corp. server at GSA headquarters here, where there are about 100 users. The 10 regional GSA offices, averaging 50 users each, also have GAMIS on servers but with regional data only. Database updates are made in Washington, and Notes propagates the data around the country and keeps databases synchronized.

Glenn Asset Management Information System (GAMIS)

Sen. John Glenn (D-Ohio) had been a strong critic of the GSA's antiquated computer systems, so when the agency's new property management EIS came up, agency officials showed it to Glenn first. The senator was reportedly so impressed with what he saw that the GSA named the system after him.

ON SITE

General Services Administration
Washington

Challenge: Old batch systems could not support the kind of management decision-making necessary to optimize the use of Uncle Sam's multibillion-dollar real estate inventory.

Response: GSA combined four off-the-shelf software packages — a property management system, GIS, data extraction tool and Notes — into a client/server application with a user-friendly look and feel.

Result: Nontechnical managers can quickly, easily and flexibly access and analyze gigabytes of information formerly available via printouts and custom programming.

IBM prepares AIX for SMP Unix server engines

By Jean S. Bozman

IBM surprised its own Unix faithful by announcing it will ship AIX 4.1, the first major revision of the operating system since the 1990 debut of the IBM RS/6000, later this week.

Users seemed somewhat bewildered by the timing of the 4.1 release, which includes several key improvements. Some said they are enjoying the fact that the current AIX 3.2.5 version is so stable and that their production applications are just settling down to take advantage of it.

But the upside of AIX 4.1's debut is that pricing for AIX 3.2.5 has been lopped back by 40% or more on server licenses for groups of 64, 128 or 256 users. Pricing for groups of up to 32 users is unaffected.

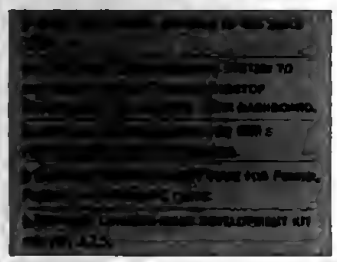
With the revamped AIX, IBM also laid down the tracks for its long-awaited symmetrical multiprocessing (SMP) Unix server engines — even though those machines are not scheduled to arrive until fall.

"This allows developers to prepare for the upcoming launch of our SMP [servers] and the Power Personal [division] launch of PowerPC-based clients later this year," said Jon Newman, director of systems software marketing for IBM's RISC System/6000 division, in an AIX 4.1 teleconference late last month. Without it, many AIX applications will not be able to take advantage of multithreading features in AIX 4.1 and IBM's SMP hardware he said.

However, the plan to get software developers out in front of the actual delivery of the SMP servers did not surprise some industry analysts. "It's the Wayne Gretzky school of software development," said Nina Lytton, president of Open Systems Advisers in Boston. "Gretzky said he skated where the puck was going to be, and they're aiming at the simultaneous arrival of hardware and applications."

AIX redux

IBM's AIX 4.1 provides ease-of-use installation features, per-user pricing and a series of firsts for IBM a version of Unix. It also . . .



Little change

IBM officials emphasized that more than 90% of all AIX 3.2.5 applications will run without change under AIX 4.1, based on testing of 100 packaged software programs. However, some programs may stumble on new AIX 4.1 system calls and may have to be modified, IBM said.

One user of RS/6000 systems, Continental Health Care Systems, Inc. in Overland Park, Kan., is a reseller of RS/6000-based pharmacy and patient-care systems for both RS/6000 uniprocessors and clustered machines. Greg Harris, director of research and development at Continental, said he believes IBM may decide to offer two operating system options for a while, just as it did after a previous enhancement of AIX 3.x.

Some of Continental's customers are waiting for SMP hardware from IBM and would like to install an SMP-ready system right away, Harris said. Other users like the current stability of AIX 3.2.5 and prefer to wait.

Analysts said users should note several pricing features of AIX 4.1, including per-user pricing that tops out at 80 users per server. There is also a lower-cost AIX client package that requires less system overhead and can run in 16M bytes of memory or less. "They have more aggressive client-side pricing and some reduction in server-side pricing [as well]," said Paul McGuckin, a senior Unix analyst at Gartner Group, Inc. in Stamford, Conn.

Server software pricing ranges from $1,500 to $14,700, depending on processor size and the number of users, IBM said.

Some users are also looking forward to easier AIX installation, a time-consuming task up until now. They will be able to choose not to install some modules.

"That would be a major breakthrough if they've done something there," said Roy Dodd, director of MIS at The Good Guys, Inc., a consumer electronics chain based in Brisbane, Calif.

He would like to bring up the AIX 4.1 system without stopping his production machines for long periods of time. "With AIX 3.2.4 or AIX 3.2.5, you have to get rid of the operating system you're on, load the new system from tape or disk, then bring it up and test it."

Still, Dodd said he will probably wait to install AIX 4.1 while third-party software developers work with it. The headquarters site has five RS/6000 servers and an IBM ES/9000 mainframe.

"I don't ever bring up anything until it's been out for six months," he said. "I'm a surfer. You stay on top of the wave, and you don't get out ahead of it."

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OLD RECORD FOR 486 MONO:	12:07
IBM ThinkPad 350C (SL/25) passive	8:50
IBM ThinkPad 500 (486/slc) mono	6:30
Toshiba T4800ct (DX4/75) TFT	5:30
IBM ThinkPad 755Cs (DX4/75) passive	5:00
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intel inside

*‡So you we come down here to find out about this Steeplechase thing. Well, it's not a horse race, but a thorough test of battery life. The Steeplechase test includes mechanical typing, pausing, task switching and printing in MS Windows v3.1, MS Word for Windows v6.0 and MS Excel v5.0. All numbers represent an average of at least two trials with power management functions enabled. Test simulates executive usage, i.e. carrying notebook between meetings and instruments use. Comparisons' times are published in Portable Computing Magazine. For a complete copy of the VeriTest results, call our TechFax™ line at 800-950-1329. †This 3-year limited warranty consists of Dell's standard return-to-factory warranty during the first year, plus 1-year of next-business-day on-site service provided by BancTec Service Corporation during the first year, plus a 2-year parts only contract for years 2 & 3. *Latitude XP is powered by one Lithium Ion battery. Latitude is powered by a NiMH battery with the option of replacing the floppy drive with a second NiMH battery, which will increase the weight of the Latitude by 0.5 lbs. *Prices valid in the U.S. only. Some products and promotions may not be available outside the U.S. Prices and specifications subject to change without notice. §Business leasing arranged by Leasing Group, Inc. The Intel Inside logo is a registered trademark and IntelDX2 and IntelDX4 are trademarks of Intel Corporation. Dell disclaims proprietary interests in the marks and names of others.* *©1994 Dell Computer Corporation. All rights reserved.*

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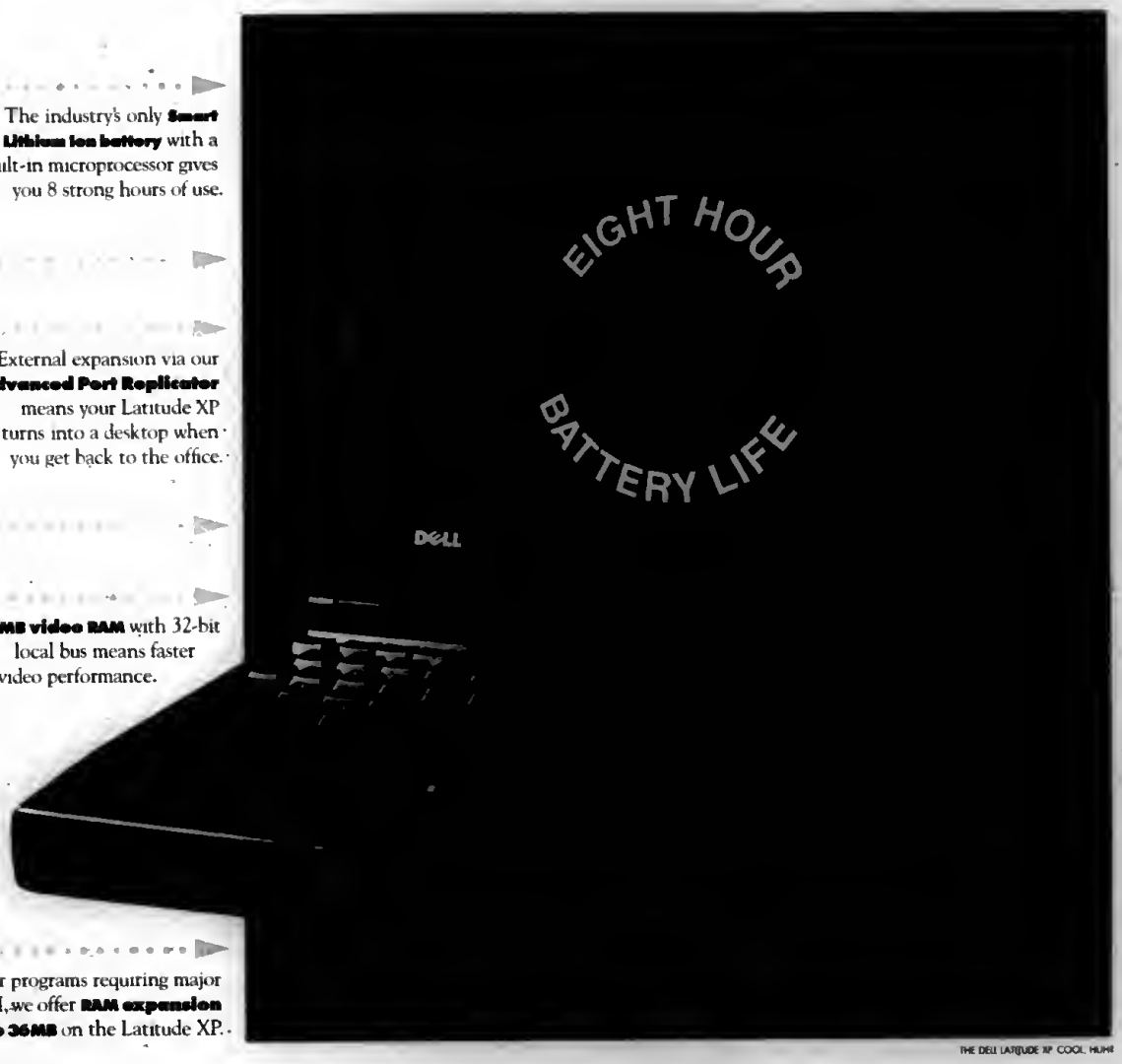

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OpenMind blazes its own path

Product targets communications

By Suruchi Mohan

The popularity of collaborative computing is bringing a whole new breed of easy-to-use products to market for users intimidated by the perceived complexity of Lotus Development Corp.'s Notes.

Digital Communications Associates, Inc. (DCA)'s OpenMind groupware product was designed to work right out of the box to help people in an organization share information, ideas and resources easily.

DCA, based in Alpharetta, Ga., will start shipping OpenMind for Windows clients in September and for Macintosh clients in October. Pricing for the product will range from $225 per client for 100 users or more to $295 per client. The server will be priced at $995.

"We didn't do anything heroic and magical to get it up and running," said Cheryl Currid, president of Currid & Co. in Houston, who has been using the product for a couple of months for document management. "It's indexed words. I see it as a marvelous tool for workgroups trying to keep research materials. In that environment, Notes would be overkill."

Notable likeness

Comparison with Notes, which even now is considered synonymous with groupware, is inevitable for all collaborative computing products.

"The danger to such products is that they are compared with Notes," said Scott McCready, a principal at International Data Corp., a research firm in Framingham, Mass. "Notes can automate a much wider range of business processes. If you're going to do something Notes does, you'd better do it a whole lot better or offer a broader range."

But this is not a Notes replacement, said Michael Bragen, principal at Business Management Consulting in Lexington, Mass. "DCA is competing with a certain portion of Notes, not with the entire functionality. It was positioned as a product of enhanced communication between remote entities," he said.

Users and analysts alike agree that OpenMind is a good communications tool. "If you're looking for a product to enhance communications within a company, [this is] an easy way to do that," McCready said.

In order to meet the needs of enterprisewide communications, the product supports several network transport protocols, including IPX, TCP/IP and Apple Computer, Inc.'s AppleTalk. It supports Windows and Macintosh clients and a Microsoft Corp. Windows NT server, which is well-suited for the client/server environment and does not hog the network, according to David Benoist, computer network coordinator at the Georgia Department of Natural Resources in Atlanta.

The use of Windows NT, even before it can carve out a sizable niche for itself, "represents a new way of building a computing environment where you don't put everything on one machine," Currid said.

Windows NT settles a lot of communications issues for developers so they save on development resources, McCready said. And using NT as their development platform puts them ahead of the curve by at least nine months, which could be to their benefit.

Notes

CONTINUED FROM PAGE 45

King, associate to the vice president of manufacturing and engineering.

"We looked at Notes, but one main problem is someone had to sit down to write the programs," said Siew-Ching Lee, an operations analyst at Avery Dennison. After visiting a major Notes customer site, "I saw that setting it up looked very involved. They had a full-time programmer and coordinator." Instead of Notes, Avery is leaning toward Collabra Software, Inc.'s Share, a group conferencing application that uses electronic mail for transporting information. Like Notes, Share does not support real-time meetings, but it is easier to set up and costs a lot less that Notes, Lee said. Notes costs $496 per user, and Share costs $69 per user.

Elite trio

Lotus Notes, Microsoft Exchange (formerly EMS) and WordPerfect Groupwise (formerly Office) are the only workgroup software products of which more than 50% of IS professionals are aware, according to a recent Dataquest, Inc. survey of 200 IS professionals.

International consulting firm Booz Allen & Hamilton, Inc., also in McLean, has about 2,000 employees using FirstClass from SoftArc, Inc. on Macintosh and PC clients to share information and ideas in an unstructured environment.

FirstClass is limited to Macintosh servers but offers two key benefits over Notes: support for real-time meetings and access to OnnNet, the FirstClass user network of roughly 500,000 users worldwide, said groupware manager Paul Lenk.

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[redacted]

Digitalk, Inc. has announced Parts Assembly and Reuse Tool (PARTs) Wrapper for Relational Databases, a component of PARTs Workbench.

According to the Santa Ana, Calif., company, the PARTs Wrapper for Relational Databases lets users create graphical applications that work independently of the database they access but leverage the power of a SQL database.

Features include automatic generation of form, table and report parts, a SQL statement dialog and a SQL Server database browser.

The PARTs Wrapper for Relational Databases costs $995.

▶ *Digitalk*
(714) 513-3000

MITI has announced SQR Workbench for Ingres, database productivity software.

According to the Long Beach, Calif., firm, the product provides rapid reports, complete formatting control, report design flexibility and procedural functionality in a client/server configuration.

The product operates in a range of databases and platforms and includes SQR, a fourth-generation language report language, Easy SQR for point-and-click prototyping and SQR Toolkit for debugging, maintenance and documentation.

Prices start at $1,200.

▶ *MITI*
(310) 424-4399

CIS, Inc. has introduced RoboCharge for OSF/1, resource analysis software.

According to the Newton, Mass., company, RoboCharge automatically collects Unix accounting file, disk storage and connect-time data and posts the information on the RoboCharge data files.

Users can enter, change and leave projects and change and execute a project log-on shell script.

Prices range from $395 to $995.

▶ *CIS*
(617) 527-1550

MountainGate Data Systems, Inc. has announced Immunity Disk Mirroring Software for its PassPort XL line of 3½-in. removable hard drives and subsystems.

According to the Reno, Nev., firm, Immunity Disk Mirroring Software features a redundant arrays of inexpensive disks Level 1 capability to back up as much as 1G byte per cartridge.

It also features continual maintenance of an identical copy of primary disk data and Windows and DOS capability.

Immunity Disk Mirroring Software costs $499.

▶ *MountainGate Data Systems*
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Reporter tracks LAN activity

By Steve Moore

Network General Corp. recently introduced The Reporter, an application that automatically prepares LAN performance reports based on data collected by the company's Sniffer LAN protocol analysis products.

"This is an important step in moving beyond just fault management and allowing you to do proactive performance management," said Val Sribar, director of global network strategies at Meta Group, Inc. in Reston, Va. For example, he said, The Reporter could determine frequent communications or track applications used heavily at certain times of the day.

Trend indicator

The Reporter is intended to save time for network managers by automatically organizing Sniffer-generated data or Simple Network Management Protocol Remote Network Monitoring (Rmon) data into graphical summaries of network performance over time. The product is aimed at midsize-user networking environments, according to a Network General spokesperson.

"I see The Reporter as useful for spotting trends and errors in our network," said Jim Runnels, a senior network analyst at Ameritech, Inc. in Indianapolis. "You can use it for baseline reports to get an idea of your current network and then later use it for capacity planning."

Runnels said his group previously had a staff member examine each Sniffer manually, one at a time, which could take several hours a week. With The Reporter, generating the automated reports requires minimal staff time, he said.

"It's a nice complement to what Network General has already been able to provide," said John McConnell, president of McConnell Consulting Co. in Boulder, Colo. "In addition to doing real-time network analysis and troubleshooting, the user can now leverage that information over longer time intervals for trend analysis and capacity planning."

The Reporter uses SQL database information to produce 23 different types of reports that synthesize information about network activity, including problems on different LAN segments or in different layers of the network protocol stack. Runnels said The Reporter allows the user to prepare reports based on either Sniffer data or Rmon data.

Menlo Park, Calif.-based Network General said The Reporter is available now for $4,995.

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Norwest unit pushed toward Cisco

By Stephen P. Klett Jr.

■ Norwest Mortgage, Inc. in Minneapolis recently went through the costly and painful process of ripping out its Wellfleet Communications, Inc. routers and replacing them with routers from Cisco Systems, Inc.

The switch was required because of a mandate from its parent company, Norwest Corp., to standardize on Cisco routers corporatewide. Norwest thought better performance would be achieved if each of its divisions ran Cisco's proprietary routing protocol.

Norwest is a banking, investment and insurance firm in Minneapolis with more than 2,700 locations in North America. It garnered $654 million in profits last year, of which Norwest Mortgage contributed roughly 10%, according to a company spokesperson.

Corporate's decision to go with Cisco, handed down in October 1993, was not music to Norwest Mortgage's ears. The mortgage group wanted to keep using Routing Information Protocol, an industry standard routing protocol, according to Matt Jacoby, a senior network analyst at the banking firm who has since left the company.

"We disagreed with [corporate IS'] decision and fought like hell but were overruled," Jacoby said. "So we went to hell and back again replacing a good, stable Wellfleet

Norwest, *page 56*

On demand

Before Norwest would agree to replace its Wellfleet routers with Cisco boxes, Cisco had to meet the following four demands:

- No labor costs for Norwest.
- All employees trained at no cost.
- All Wellfleet support contracts covered at no cost.
- Performance equal to or greater than that of Wellfleet.

Airline tickets land in kiosks

By Mitch Betts

The kiosking of America continues unabated. First, there were networks of automated teller machines (ATM) for banking. Then, touch-screen kiosks for government services began sprouting up in the nation's shopping malls.

The next wave may be a network of ATM-like terminals for the immediate delivery of tickets and documents to corporate employees and consumers. Docunet, Inc. in South San Francisco recently announced the new product delivery system that rides on a nationwide private network operated by Electronic Data Systems Corp.

A typical Docunet application is same-day delivery of airline tickets from a travel agency to its corporate customer. Instead of sending tickets by overnight courier at a cost of $8 or more, the EDS network delivers the reservation information to a Document Delivery Machine's printer at a corporate site.

Docunet applications *include delivery of sports and concert tickets*

The travel agency's cost for the Docunet transaction, which takes about one minute, is $7, spokesman Ron Colnett said.

Interest piqued

Major travel agencies, including USTravel Systems, Inc., Thomas Cook Travel and Travelogue, Inc., have already signed up for Docunet delivery. American Airlines and US Air also plan to deliver tickets directly to customers via Docunet to cut down on the number of customers who show up at the airport counter to pick up prepaid tickets.

Fila USA, Inc., a Hunt Valley, Md., sportswear firm that has been a Docunet beta site for two years, depends on the technology to deal with top executives' last-minute travel plans.

Because of Docunet's instant delivery of tickets, "an executive can change his mind at 6 p.m., get the tickets and boarding passes and still catch a plane that leaves at 8 p.m.," said Becky LeFauvre, Fila's travel coordinator.

The EDS backbone network, which already serves nearly 9,000 ATMs, consists of 56K bit/sec. circuits to local multiplexer sites, which feed multidrop circuits to each machine, an EDS spokesman said. The processing center is in Rochelle Park, N.J.

Other applications for Docunet include the delivery of sports and concert tickets, traveler's checks, cash, Amtrak tickets, travel insurance forms and college transcripts. At consumer outlets, users will be able to insert a credit card to buy the tickets.

Docunet has ambitious plans to put 15,000 or more Docunet machines in supermarkets, shopping malls and office lobbies across the U.S. by the year 2000. The first rollout will be 150 machines in the Washington area this year.

Washington-area supermarket chain Giant Food, Inc. plans to put Docunet machines in its stores this fall, and Ralphs Grocery Co. in California will follow with 170 installations in 1995.

Chemical Banking Corp. will use Docunet for its bank-at-work program in New York, New Jersey and Texas, while Bell Atlantic Corp. will be working to place the machines at customer sites in its mid-Atlantic territory.

IBM, HP wrestle for SNA networks

Users face array of management choices

By Elisabeth Horwitt

IBM and Hewlett-Packard Co. have taken their battle for network management market share into IBM's traditional turf: mainframe and SNA networks.

But users are unlikely to dump IBM's mainframe NetView for HP's Unix-based OpenView or even NetView/6000 as a way of managing extensive mainframe and SNA installations, said David Passmore, president of Herndon, Va.-based consultancy Decisis, Inc.

Lacking power

Two factors are working against users making the switch, he said. First, the mainframe version of NetView has many powerful applications for managing jobs and automatically responding to problems on mainframe networks. Also, a Unix-based network management system simply does not have the MIPS to handle thousands of SNA devices, Passmore said.

On the other hand, some companies with a dwindling population of IBM hosts are looking to Unix-based management platforms as a way to integrate management of SNA devices with that of their PC-based client/server environments.

Their choice of platform depends, at least in part, on which provides the better management of IBM systems.

Mortgage Guaranty Insurance Corp., for example, is moving down to a client/server architecture and "would like to reduce dependency on the mainframe" and on mainframe NetView, said Jim Stirling, manager of the Milwaukee firm's technical services group. The company has tentatively chosen OpenView as its platform for managing a mixed bag of Unix systems, including HP's HP/UX, IBM's AIX and The Santa Cruz Operation's SCO Unix.

However, Mortgage Guaranty has not dismissed the possibility of moving to NetView/6000, particularly if IBM comes up with better integration across Unix and mainframe scheduling and management operations, according to Stirling.

The insurance firm is not satisfied at the moment with OpenView's SNA management capabilities and is sticking with mainframe NetView for the moment, he added.

Major products available for managing SNA networks on Unix platforms include the following:*

Peregrine Systems OpenSNA (Peregrine Systems, Inc.)
- Runs as OpenView or NetView/6000 application
- Requires "SNA agent" on mainframe to collect SNA network information
- Will include NetView-like automation facilities

IBM SNA Manager/6000
- Exchanges events, automation with mainframe NetView
- Requires mainframe NetView
- Provides display integration with NetView/6000

Cabletron's BlueVision
- Similar in concept to OpenSNA but runs on Cabletron's Spectrum platform

*Hewlett-Packard resells Peregrine Systems' SNA software

Source: Decisis, Inc., Herndon, Va.

HP's rollout

HP currently provides SNA management on OpenView through OpenSNA, a third-party package from Peregrine Systems, Inc. However, more products are in the works.

An HP spokesman said Legent Corp. is scheduled to ship next month a version of its IBM MVS management suite for HP's OperationsCenter, which is an OpenView-based systems management platform. And at the HP OpenView Users Forum in Orlando, Fla., this week, HP will announce that another major mainframe management software vendor's products will be ported to OpenView, he added.

Meanwhile, stalwart IBM customers are also clamoring for better integration between NetView/6000 and mainframe NetView.

A southern pollution control company, for example, recently bought NetView/6000 to provide in-

IBM, HP wrestle, *page 56*

Chipcom shapes ATM plan

By Stephen P. Klett, Jr.

■ Chipcom Corp. in Southboro, Mass., recently laid out its own Asynchronous Transfer Mode (ATM) road map.

Between September and early next year, the company plans to ship a two-slot ATM switch module and optional high-speed backplane for its Oncore intelligent hub, a family of User Network Interface modules, an ATM interface for its Galactica switching hub and an Ethernet-to-ATM switching device that will be integrated with Oncore.

In control

The ATM switch module will include an ATM switch implemented on a single 2.2 million transistor chip with more than 8G bits of total capacity, the company said. The switch will perform control point functions such as connection management for private and switched virtual circuits, route computation and ATM LAN-to-WAN integration using switched virtual paths.

The backplane consists of a 2G bit/sec. switching bus derived from the Galactica switch's Gbns architecture, which Chipcom acquired via its merger with Artel Communications Corp. in Hudson, Mass.

"This is a very powerful story," said Charlie Robbins, a vice president at Aberdeen Group, a consultancy in Boston. "Galactica is a very strong product that Chipcom needed to build into the Oncore engine because that's what end users wanted." Robbins said the Galactica-based backplane gives users a clear path to ATM and positions Chipcom for high-speed networking.

Chipcom is also working closely with IBM to develop additional ATM technology for stand-alone and hub-integrated products.

The two companies will collaborate on LAN emulation, native protocol and application programming interface support and congestion control.

Chipcom did not reveal pricing.

Notable delivers air mail

By Michael Fitzgerald

The find-you-anywhere-and-deliver-your-messages concept took a step closer to reality recently when pen vendor Notable Technologies, Inc. announced AirNote, a wireless messaging service.

AirNote gives users a way to receive electronic mail and voice mail on a pager. The $349 package includes the pager, Notable's AirNote interface and management software, a personal Internet address and operator access.

"It's pretty neat, though it's a little expensive," said Christopher Fralic, account manager at CoreTech Consulting Group, Inc. in Wayne, Pa. "I don't know too many other services where I could give a customer an E-mail address, and they can get a message to me wherever I am."

Price drop?

But Fralic said the potential $150 a month for nationwide service was too pricey. That may be eased somewhat, he said, when AirNote becomes available in the PCMCIA form factor, which would make it more convenient to use with a notebook computer.

Ronald Brown, Notable's president and chief executive officer, said a PCMCIA version will be available this month.

Andrew M. Seybold, editor in chief of "Outlook on Mobile Computing," a Brookdale, Calif., newsletter, said AirNote's packaging was a good step forward for the mobile industry because it gave the user one-stop shopping.

Because users will have one pager number and personal identification number, it should be easier to reach them, Seybold said.

Going once . . .

The Federal Communications Commission's first-ever auction for wireless spectrum generated $617 million in bids, more than 10 times the expected total. The following six companies purchased the 10 licenses for sale last week:

- **Paging Network, Inc.**'s Paging Network of Virginia paid $117 million for three 50-KHz licenses.
- **McCaw Cellular Communications, Inc.**'s KDM Messaging Co. paid $160 million for two 50-KHz channels.
- **Mobile Telecommunications Technologies Corp.**'s Destineer Corp., formerly known as Nationwide Wireless Network, paid $127.5 million for two licenses — one is a paired 50-KHz channel, the other a 50/12.5-KHz channel.
- **BellSouth Wireless, Inc.** paid $47.5 million for a 50/12.5-KHz channel.
- **AirTouch Communications'** AirTouch Paging paid $47 million for its 50/12.5-KHz channel.
- **Pagemart II, Inc.** bought a license for a 50-KHz unpaired channel for $38 million.

Norwest

CONTINUED FROM PAGE 55

network with Cisco, which was extremely difficult. There was nothing plug-and-play about it."

Norwest Mortgage pushed the leading edge 18 months ago when it installed Concentrator Node routers from Wellfleet that fed off a Fiber Distributed Data interface (FDDI) backbone connecting 770 users across 18 Token Rings. Performance was good enough that Norwest Mortgage decided to duplicate the environment last February in its Bloomington, Ind., office, which supports 500 users. In the end, seven Wellfleet routers were installed.

Norwest Mortgage grudgingly agreed to make the switch when Cisco met four main conditions (see box page 55).

From a corporate perspective, it was a small change. "Our total deployment of Wellfleet was very limited," said Bart Greenwood, vice president of technology at Norwest Technical Services, the IS arm of Norwest. "We are remarkably happy with our decision."

A big job

To achieve the same performance, Jacoby said 17 high-end Cisco 7000s were needed, which cost roughly $150,000 each. It took four months to complete the switch, "and the project was much larger than we anticipated," he said.

While Cisco did meet the four main conditions, the vendor did shortchange Norwest on some features it was expecting because Wellfleet was set to deliver them in an upgrade to its boxes. The Cisco wares did not fully enable the department to configure the routers on the fly or replace network interface cards during production times without bringing the routers down.

Jacoby said hot-swapping interface cards could cause the routers to lock up. They had to be turned off and on, making it impossible to replace cards during production time.

Norwest Mortgage's first step in the changeover went smoothly. It installed one Model 7000 connected to a FDDI backbone supporting three Token Rings, and it did not encounter significant problems. However, reports of network slowdowns began to surface when it moved to a configuration of two 7000s supporting eight Token Rings.

"People started to lose their connections, which is pretty severe," Jacoby said. The Minneapolis office generates roughly $15 million in revenue each business hour.

Users were moved off the FDDI backbone to a secondary Token Ring backbone "to limp by" until this problem could be solved. Meanwhile, Norwest Mortgage cleaned up everything that could be a potential problem. A faulty FDDI card was eventually found in one of the 7000s, which when swapped out appeared to solve the problem.

However, when the Bloomington office was switched over, the same problem cropped up and could not be isolated to a single faulty interface. Cisco's solution was to replace the interfaces for free. "This was a shotgun approach, but once we found the right mix of interfaces, everything seemed to work," Jacoby said. The Bloomington network was down for a total of five hours. "At $7 million per hour this 'free' swap out wasn't very cheap," he said.

Since then, Jacoby said the transition has gone smoothly, and Norwest Mortgage is happy with the performance it is getting.

IBM, HP wrestle for SNA nets

CONTINUED FROM PAGE 55

tegrated management across a distributed environment of Unix and IBM hosts.

The company also purchased multiprotocol routers that handle both TCP/IP and SNA traffic.

Integration issue

The main concern of a network manager at the company, who requested anonymity, was whether IBM's SNA Manager/6000 provided tight enough integration between the two environments.

"We want total NetView capability from the NetView/6000 graphical user interface so our staff doesn't have to learn several GUIs," he said.

IBM is preparing to roll out a number of offerings that will better integrate its mainframe and AIX-based management platforms, said Sanjiv Ahuja, IBM's director of network management platforms. They include the following:

- Integration between Resource Object Data Manager, an object-oriented data storage structure on the mainframe, with a similar structure on AIX.

This will allow the user to access management data across both systems as a "single," logical entity," Ahuja noted.

- Implementation across IBM networking products of the Advanced Peer-to-Peer Networking (APPN) management information base (MIB), which enables Simple Network Management Protocol systems such as NetView/6000 to collect APPN alerts and alarms.

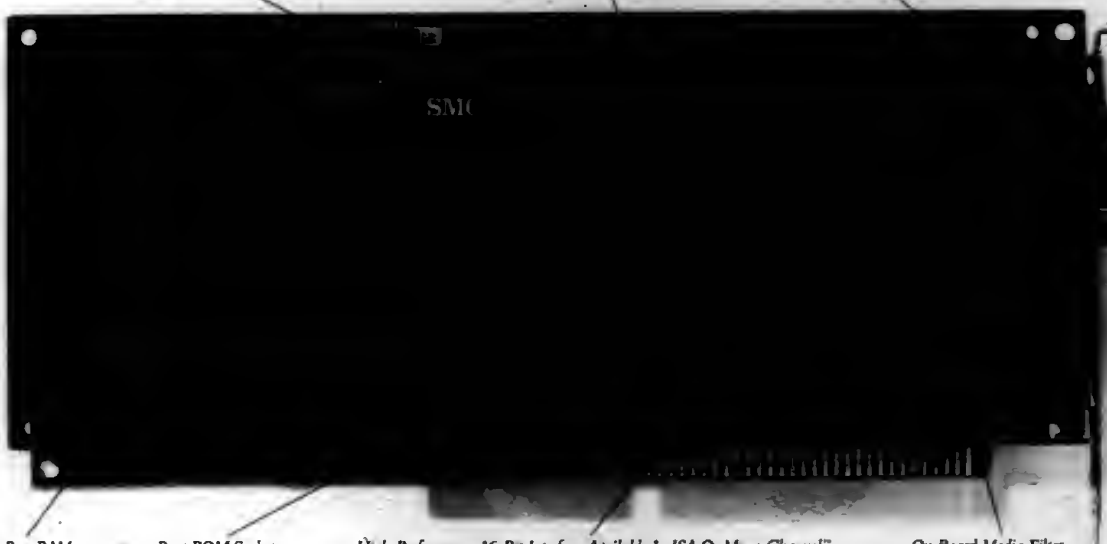
The MIB currently runs on the IBM 6611 router.

- Expanded protocol support for the Multisystem Manager, a mainframe management application that collects alerts and alarms from Novell, Inc.'s IPX and LAN Network Manager LAN media. TCP/IP support will be added shortly, according to Ahuja.

What's the difference?

One prime differentiator between IBM's NetView/6000 and Hewlett-Packard's OpenView: The IBM network management system requires mainframe-based NetView software to manage IBM host and SNA installations, but the latter does not.

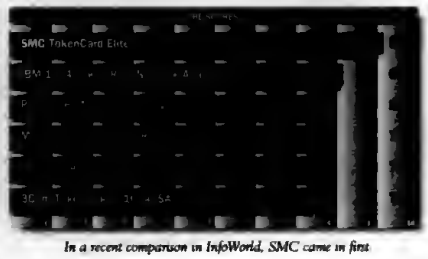
Compatible. Reliable. And at $249, incredible.



There's a new leader in Token-Ring Technology.

In June 1993, InfoWorld tested the top Token-Ring adapters for speed and flexibility. Guess who came out on top?

Not IBM, Madge or Olicom. But SMC. The review stated: "Not only did the



In a recent comparison in InfoWorld, SMC came in first

SMC TokenCard Elite™ offer overall excellence (with excellent or very good scores in every category), it stood out for being among the easiest to install."

The SMC TokenCard Elite is 100% interoperable within IBM environments. It's also fully compatible with both IBM and IEEE 802.5 Token-Ring standards, fully software configurable, and backed by a lifetime warranty. You get lots of extras, too. Like free SNMP management.

But the story doesn't end there. SMC is not only the technology leader but also the low price leader.

In fact, with an incredible new price of $249 in a 50-pack, and only $299 for a single card, the SMC TokenCard Elite is priced far lower than any other Token-Ring adapter.

With SMC Token-Ring products priced 50% lower than typical solutions, that can translate into a savings of over $35,000 per 100-node installation. Without your having to sacrifice quality, reliability or peace of mind.

EZStart: The ultimate installation and diagnostic tool.

EZStart™, SMC's new Windows-like auto-configuration and test utility, makes installation and troubleshooting a snap.

In fact, according to independent network testing laboratory LANQuest Labs, EZStart is "head and shoulders above the others."

In the unlikely event you'll need it, you're also guaranteed the service and support of a company that's been in business for 23 years and has over 6 million nodes installed.

So before you make another Token-Ring purchase, talk to SMC. In addition to the world's best adapters, we offer a full line of intelligent and stackable MAUs and hub cards that deliver the lowest cost per managed port in the industry.

SMC also has the industry's first switching hub that supports Token-Ring and the first HMI-compliant Token-Ring hub card.

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Contact us today and find out why, if you're not using SMC in your Token-Ring network, you're settling for second best. And paying for it.

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Hewlett-Packard computer systems helped Spalding's worldwide revenue grow four times faster than the industry average.

"Our HP 3000s have taken the worry out of daily operations and future growth. They leave us free to concentrate on customer service."

— Bard White, Spalding's CIO and Worldwide Director of MIS

Instead of investing in mainframes, Spalding looked for a better way to manage its growing business. A way that would make the 115-year-old sporting goods company more responsive to customer demands around the world and save money at the same time.

So HP developed a networked solution built around powerful HP 3000 Business Systems in a dozen data centers and distribution hubs worldwide. This gives Spalding instant global access to management information, helping them react quickly to changing consumer needs, and deliver products faster.

To learn more, call 1-800-637-7740, Ext. 7460 for our free video, *Strategic Computing*, starring some on-the-ball business leaders. It shows why you might want to rethink your company's game plan.

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Gary H. Anthes

No stopping the FLOPS

You cannot be too rich, too thin or have too much computer power.

I was just getting used to the idea of GFLOPS (billion floating-point operations per second) and even TFLOPS (1,000 GFLOPS), when along comes talk of petaFLOPS — 1,000 TFLOPS or 1 million billion calculations per second.

How could any application possibly need that kind of power? I mean, my Intel 486 PC running at 27 MIPS seems pretty snappy. Indeed, it runs 15 times faster than the first computer I ever used, a multimillion-dollar IBM 360/75, one of the fastest mainframes in the world in 1968.

A petaFLOPS computer could do in one second as much as my PC running nonstop for 14 months. Do we really need peta-anything?

Well, yes. Computer scientists from NASA, the National Science Foundation and the U.S. departments of Energy and Defense recently held a workshop to brainstorm about petaFLOPS computers. They sketched out some mind-boggling applications, including home video games supporting a million simultaneous players in a large virtual environment.

The supercomputer gurus also envisioned a 1,000T-byte Global Surface Database containing information about the Earth's land mass at a resolution of 10 meters by 10 meters, with each point updated several times a day by 100 satellites. The database would help answer questions such as: What is the expected yield and quality of French wine this year? How likely are food riots in Mongolia this winter? Which forested areas are most susceptible to fires?

The group also talked about interactive "CyberScenes," which would combine real-time video with models of three-dimensional objects to produce total-immersion virtual reality. CyberScenes would enable "exploration via telepresence" of places such as reactor cores, deep sea vents or the human heart.

A CyberScene would require 1T bit/sec. of input and run on a petaFLOPS computer with 100 to 10,000 processors, the group said.

Workshop attendees concluded that by the time an economically viable petaFLOPS computer is available in 20 years or so, we'll have inexpensive TFLOPS workstations on our desktops. I won't need that for my word processing work, but it will be just the thing for my grandchildren's computer games.

And then, of course, we'll be thinking about exaFLOPS (1,000 petaFLOPS) computing.

Anthes is *Computerworld*'s senior correspondent in Washington.

HP 3000 a hit with mail order

By Mark Halper

It is an ironic twist. As Hewlett-Packard Co. struggles with internal order-fulfillment difficulties, it is doing a brisk niche business selling its HP 3000 proprietary minicomputer to mail-order businesses as an order-fulfillment system.

Current Top 3 order-fulfillment hardware platforms

Vendor	Platform	Units installed	Percent of units installed*
IBM	AS/400	354	9.6%
Hewlett-Packard	HP 3000	270	7.3%
IBM	RS/6000	130	3.5%

*Based on a total of 3,700 installations

Source: *The Guide to Catalog Management Software*, Southampton, Pa.

Although analysts peg growth of the mature HP 3000 at a 5% annual rate, an HP spokeswoman said that sales to mail-order businesses are growing at a 30% clip, a rate that would make order fulfillment the fastest growing niche for the 3000. "I'd be hard-pressed to imagine one growing faster," said Robert Herwick, president of Herwick Capital Management in San Francisco.

HP's success comes at a time when it is slogging through a massive overhaul of its own outdated order-fulfillment process [CW, July 11].

In a computing era wildly enthusiastic about "open" and lower-priced computing environments full of Unix and PC servers and LANs, why are the likes of QVC, Inc., Hanover Direct and Hammacher Schlemmer & Co. choosing to run all or parts of their order-fulfillment process on HP's most expensive and least open computing platform?

HP users in the mail-order business had two consistent answers, and one had more to do with software than hardware. A very popular order-fulfillment software program called the Mail Order and Cataloging

HP 3000, *page 62*

Client/server platforms

Managing infrastructure proves problematic

By Rosemary Cafasso

Many client/server users are becoming quite familiar with the term trade-off.

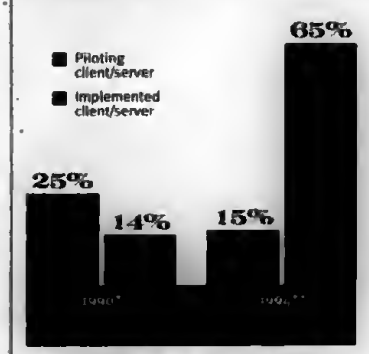
As customers move to production client/server platforms, they are finding that in exchange for benefits such as end-user productivity boosts, they must deal with a new set of challenges, specifically, managing the systems and staff required for this new environment.

This is a conclusion drawn in two Forrester Research, Inc. client/server reports. Information systems executives contacted last week agreed with the finding.

"There ain't no such thing as a free lunch," said Kevin Reilly, vice president of IS at Richardson Electronics Ltd. "Moving to client/server means I have traded one set of problems for another. Hopefully, I would rather be dealing with the newer set of problems than the older problems."

Taking the plunge

Client/server implementation has gone from being the exception to the rule



Source: Forrester Research, Inc., Cambridge, Mass.

Complex management

Forrester in Cambridge, Mass., recently surveyed 100 client/server users and found that for 40 companies running mission-critical client/server applications, the three key challenges were system security, system and network management and multivendor complexities, said Waverly Deutsch, an analyst at Forrester.

"The last 12 months have been a critical phase," Deutsch said. As companies increase the number of client/server applications, the implementation phase gets easier, but "managing the infrastructure gets more complicated," he added.

A separate Forrester report revealed that these challenges are bound to become more widespread. Of the 75 companies surveyed, 65% said they were running client/server production applications (see chart).

In this report, production applications were those no longer in a controlled test mode. They included everything from decision-support and data access programs to transaction systems, Deutsch said. In the other Forrester report, which surveyed 100 client/server users, a mission-critical system was defined as an application with at least 100 users, spanning a minimum of three geographic sites.

Going with one vendor

Steven Wells, director of information at Suburban Propane in Whippany, N.J., was concerned enough about potential problems with a multivendor client/server installation that he sought out a software vendor that could provide one-stop shopping. His choice was SAP America, Inc.'s R/3 client/server system.

"I was a little stubborn about this," Wells said. "You may not get the best subsystems doing it that way," but the choice also eliminated the need to learn different systems, build interfaces between disparate systems and work with many different vendors.

Wells also said the benefits of client/server come at a price. "In some respects, client/server is more complex than mainframes. You have machines spread out all over the place — middleware software, LAN software, Windows software."

Cary Serif, manager of applied technologies at Huntington Bancshares, Inc. in Columbus, Ohio, cited systems management as a critical issue for the bank's recently implemented client/server system.

"The issue I very strongly agree with is the whole systems management issue," Serif said in response to the Forrester report. "Once you do a really critical application with a dependency on the network, you can discover the robustness isn't there."

Customer data is on-line asset at U.S. Bank

By Thomas Hoffman

For U.S. Bank, the biggest advantage of replacing its microfiche systems has been the access that remote users have gained to customer data.

"We've been able to change the workflow quite a bit in the branch environment" with on-line access to customer data, said Tim Meier, manager of information services at the Portland, Ore., bank, whose parent is U.S. Bancorp. In particular, it has been a boon for the 500 bank employees who access customer transaction data from the bank's 420 branches across five states in the Pacific Northwest.

The transition was from a stand-alone microfiche unit to a 700G-byte optical storage jukebox from FileTek, Inc. Before the bank installed the jukebox, customer service representatives had to request a customer report from the information services division for either a printed or microfiche copy of the document.

U.S. Bank handles roughly 25,000 reprint items per month, ranging from a customer's transaction history to a homeowner's loan portfolio.

But the microfiche and paper-based report regeneration was a time-consuming and expensive process for the bank, Meier said, because it required reproducing the microfiche and retaining a courier service to distribute reports to geographically dispersed staffers.

Meier said he could not place a dollar value on the cost savings expected from the mainframe-based optical-disc storage system. Still, the bank expects to achieve an 18-month return on investment for the $700,000 it has allocated toward FileTek hardware and software, according to Robert Baker, U.S. Bank's manager of micrographic services.

Easy access

With the FileTek system, remote users can access customer reports generated under an IBM ES/9000 Model 962 mainframe by logging on to an IBM CICS using 3270-type terminals. Once they are logged on to CICS, users are able to access customer reports and download the files to their workstations over T-3 and frame-relay network connections. The users are also equipped with FileTek's Ammo-II report retrieval software and Extra, an IBM 3270 emulation software package from AttachMate Corp.

U.S. Bank's approach to replacing its COM systems mirrors efforts undertaken by other banks in recent years, according to Bruce Silver, vice president of workflow and document imaging at BIS Strategic Decisions in Norwell, Mass. "It's not really a new phenomenon," said Silver, who cited Bankers Trust New York Corp. as a significant user of the optical storage medium.

U.S. Bank's Tim Meier: *'We've been able to change the workflow quite a bit'*

Although U.S. Bank has continued to expand its IBM mainframe direct-access storage device (DASD) volume as it has acquired other banks, optical storage has proven to be a more cost-effective medium for housing customer transaction data, Baker said. For example, U.S. Bank, which houses 500G bytes of mainframe DASD, pays approximately $5 per megabyte for DASD storage. Although it is a slower media, the cost of storing information on 12-in. optical discs is a more affordable 50 cents per megabyte.

U.S. Bank has derived other benefits from the FileTek system since its installation last July. Where the $21 billion (in assets) bank once had 10 staffers who were responsible for accessing and regenerating customer reports on microfiche, only two are required to manage the FileTek system today. Baker said the bank used to spend roughly $1 million annually to produce and distribute microfiche reports.

Tracking reports

Furthermore, the bank had no way of monitoring the frequency of microfiche-based report utilization, Meier said. Unlike its COM predecessor, the FileTek system enables the bank to track which customer reports are being accessed and how often they are being used.

Baker added that the bank expects to complete its transition from microfiche to optical storage by year's end, at which time he expects the company will be using the newer storage media to an even greater extent. "With microfiche, not everyone was willing to pay for occasional use," Baker said. "Now, many more people can have direct access to more information."

Job scheduling

Client/server users seek immediate benefits

By Rosemary Cafasso

Client/server users are finding productivity boosts from built-in job schedulers, which some vendors are providing as part of their applications packages.

Nonetheless, some industry analysts advocate that users avoid short-term or application-specific fixes and instead focus on crafting longer-term strategy for job scheduling across a client/server network.

Job scheduling, traditionally a mainframe process to manage batch runs, is expected to be an increasingly critical issue as users encounter processing complexities on their client/server networks.

System management

If job scheduling is handled on an application-by-application basis, "it will be a nightmare," said Bob Johnson, associate director of software services at Dataquest, Inc. in Framingham, Mass. "You will be spending all your time setting up and scheduling on different servers and going in and out of different products. That isn't going to work. The key thing here is going to be centralized control and extended reach over an entire suite of client/server products," he said.

Quick fix

But some users said that although a long-term, broader strategy may eventually be needed, they are finding some immediate benefits with the built-in schedulers.

Trimac Transportation Services Ltd. in Calgary, Alberta, for example, is using SQL Financials, Inc.'s client/server financial software and has set up mainframe-like nightly batch runs using the software's Task Manager component. Each evening, the Task Manager dispatches a set of jobs designated by the director of financial services to an Intel Corp. 486-based PC in the company's data center.

"It allows us to off-load processing to another system so we don't tie up the one we are using to do the [main] processing," said Joe Strathern, coordinator of information technology integration at Trimac.

The Task Manager organizes nightly runs for financial reporting, posting journal entries and data downloads from other systems.

Susan Sutherland, a senior analyst at British Columbia's Liquor Distribution Branch, is another user who has seen immediate relief from a built-in scheduler. Sutherland works with PeopleSoft, Inc.'s accounts payable software and uses its Process Scheduler to dispatch jobs.

Time-saving device

In Sutherland's case, the productivity boosts come from the menu-driven scheduler because it saves time in setting up jobs.

"When we started, we didn't have [Process Scheduler], and you had to run jobs through another utility," Sutherland said. "You would have to know what the job number was, type it in, initiate [the scheduling utility], and it would prompt you for parameters."

Scott Brady, director of technology consulting at SQL Financials, said his company provided the Task Manager two years ago — a time when there was little else available for client/server job scheduling.

"I think everyone would like to get a standard," Brady said. "In the short term, customers need this technology."

Currently, there is no standard technology or approach to job scheduling for client/server platforms. Analysts said that among the different options on the market today — which include job schedulers from systems software companies — there is no one product that is superior to the others. The key, analysts said, is to zero in on a particular approach and use it to create a job scheduling strategy.

Briefs

AMS wins Telia contract

American Management Systems, Inc. (AMS) in Fairfax, Va., won a $20 million contract from Telia Mobitel, a Swedish cellular carrier, to develop an advanced customer service and billing system.

IBM to buy Marcam software

IBM is buying Marcam Corp.'s object-based plant maintenance software running on RS/6000 systems for internal use on a worldwide basis, the companies said recently. The Maintenance Management product is the first in a planned series of applications that Marcam is developing for multiple platforms using object technology. IBM plans to use the software in research and development facilities, manufacturing plants and office buildings.

AT&T GIS, Informix team

AT&T Global Information Solutions (GIS) and Informix Software, Inc. announced a strategic agreement for joint marketing and product development programs for parallel processing systems. Informix is using AT&T GIS' 3600 massively parallel processor as a development platform for clustered and massively parallel Informix database products.

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HP 3000

CONTINUED FROM PAGE 59

System II (MACS II) from Smith-Gardner & Associates in Boca Raton, Fla., runs only on the HP 3000.

"To me, the box didn't matter. I was looking at software solutions," said Alan Kipust, senior vice president of operations at Paper Direct, Inc., a fast-growing Lyndhurst, N.J.-based supplier of fax paper that processes about 5,000 orders a day on an HP 3000 Model 987.

Paying for power

The same software-driven approach at educational software vendor Tom Snyder Productions, Inc. in Watertown, Mass., meant the company decided to buy more power than it had originally planned when it purchased a low-end 3000 for around $35,000 two years ago.

"Frankly, we thought we could squeak by on a Macintosh or a Novell LAN," recalled Rick Abrams, the company's president. Tom Snyder Productions settled on Smith-Gardner software because of the program's ability to track an order through various stages, an important facet of customer service, and take note of sales leads, Abrams said.

Still in Cobol

Many of the best-selling order-fulfillment programs, such as Smith-Gardner's MACS II, are written in Cobol rather than in modern programming languages.

Both Kipust and Abrams also cited the other commonly stated reason for user interest in the proprietary HP machine, which runs the MPE/IX operating system: "In any mail-order business you need uptime, and the HP 3000 gives you uptime," noted Eytan Bernet, Paper Direct's director of software engineering.

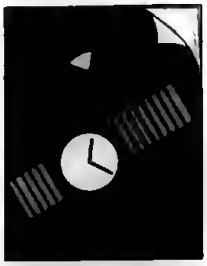
The 3000 has a solid reputation not only as a fast transaction processor but also as a workhorse that refuses to crash. And uptime means dollars to mail-order operations, especially during the Christmas selling season.

Cost not the issue

Ernie Schell, author of *The Guide To Catalog Management Software* and president of Marketing Systems Analysis, Inc., a consulting firm in Southampton, Pa., noted that mail-order users are often willing to pay a premium for a workhorse.

These users want hardware with a proven ability to handle the mind-boggling complexities of mail-order processing, where systems sometimes must record thousands of ordering permutations across various daily stages of processing and fulfilling an order, Schell noted.

Although users are not averse to PC and Unix systems, many of the mail-order vendors that rely on LAN-based systems are small shops, he said. But outside of PC-reliant shops, the two most popular platforms are the HP 3000 and the proprietary box that it trails, IBM's AS/400 (see chart page 59).

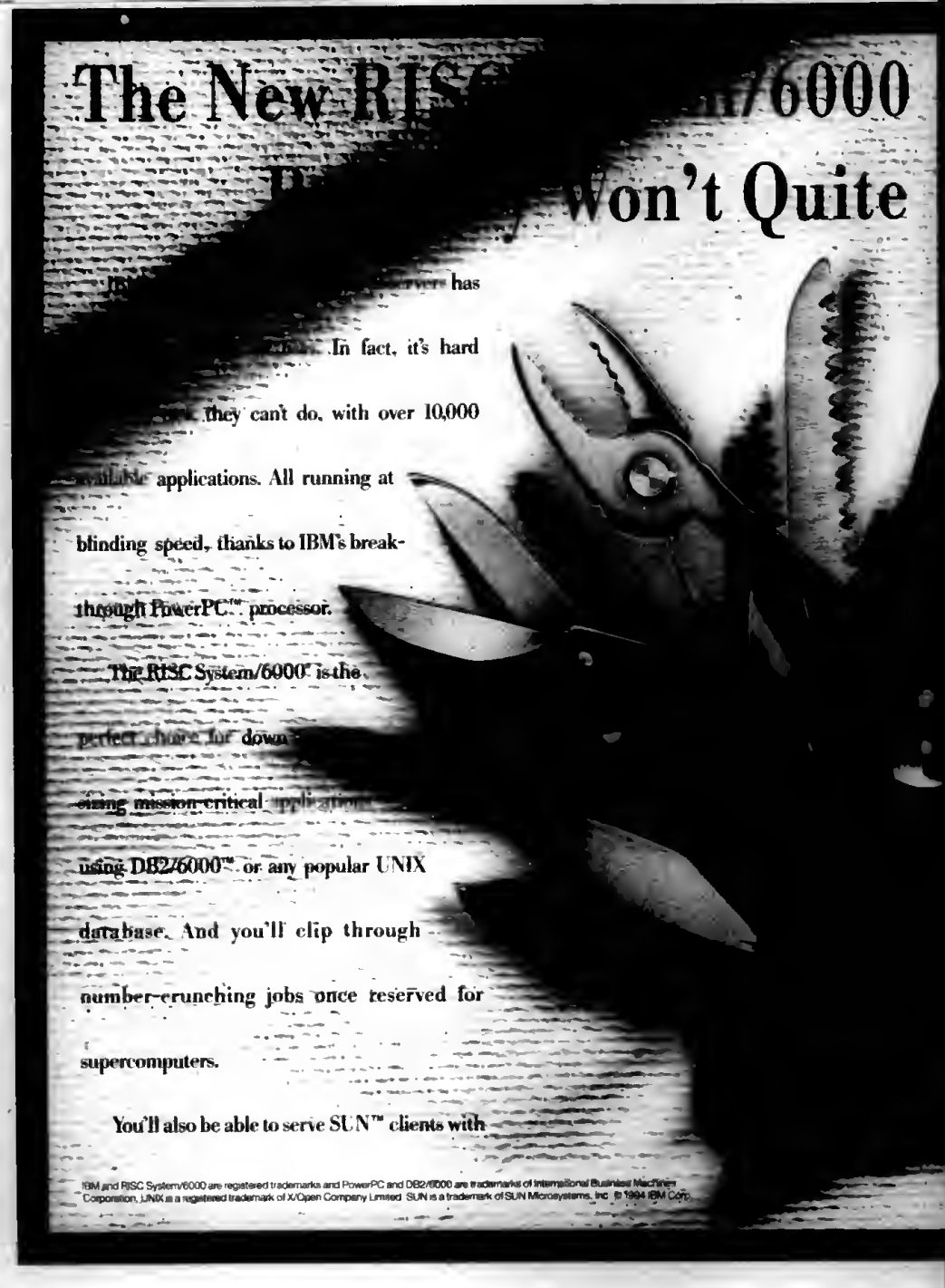


Lean on me

"A big part of it is reliability and low maintenance costs," observed Ken Krupa, director of operations and systems development at Hammacher Schlemmer. "I've heard a lot of IS managers say the HP 3000 is indestructible. You really don't have to worry about hard drive crashes and hardware failures, and that's especially important at peak periods," he added.

Hammacher Schlemmer, which had been running a homegrown mail-order system on an HP 3000 Model 967, last month upgraded to MACS II software, while staying on the 3000.

One reason the company decided on the Smith-Gardner/HP 3000 combination was to avoid the cost of converting to another platform, such as an IBM AS/400, Krupa said. Hammacher Schlemmer also determined that the HP solution provided lower operating costs than did an IBM solution.



[redacted]

Epic Data, Inc. has announced XCS for Open VMS, an application programming interface and data collection resource manager for the IBM AS/400.

According to the Richmond, British Columbia, company, XCS provides terminal management, transaction management and terminal services.

The product connects business applications into a data collection network using library commands.

XCS for Open VMS costs $3,500.

▶ *Epic Data*
(604) 273-9146

Compuware Corp. has announced Playback Release 5.3, an automated testing product for distributed CICS/ESA environments.

According to the Farmington Hills, Mich., company, Playback Release 5.3 provides support for IBM's CICS distributed transaction processing. Users do not have to know where their transactions, files or databases reside to test the applications.

The product reduces test cycle time by not requiring users to rekey test transactions or continually restore test files and databases to synchronize data.

Playback Release 5.3 supports MVS/XA, MVS/ESA, CICS Version 1.7 or higher and DB2 Version 2.2 or higher.

Prices start at $35,000, based on options and CPU type.

▶ *Compuware*
(810) 737-7300

Wall Data, Inc. has announced Rumba for the Mainframe, Windows NT version, which is host connectivity software.

According to the Redmond, Wash., firm, the Windows NT version supports multiple interfaces for concurrent sessions to different hosts, with backup connection routes so users can still work even if there is a communication failure.

Features include enhanced tool bars, hot spots and quick-step pads, a common user interface for other versions of Rumba and a 32-bit design for multitasking.

Rumba for the Mainframe, Windows NT Version, costs $400 for a single-user license.

▶ *Wall Data*
(206) 883-4777

The Information Systems Manager, Inc. has announced an OS/400 component to its Capacity and Performance Manager product line.

According to the Bethlehem, Pa., firm, the OS/400 component was designed to let PC users analyze the performance of IBM AS/400 systems running OS/400.

The product is a Windows-based system that provides fast, precise analysis and forecasting of various performance metrics in the OS/400 environment.

A Smart Chart facility lets users view specific data points or move unwanted data from charts. Users can also distribute charts electronically.

Prices starts at $10,000.

▶ *The Information Systems Manager*
(610) 865-0300

Financial Technologies, Inc. has announced Visual Bugoff/400, a debugger for IBM's AS/400.

According to the Cedarhurst, N.Y., firm, Visual Bugoff/400 contains a graphical user interface and provides a full screen display of RPG, Cobol and CL code as it executes. The product is mouse-driven so users can change breakpoint and variable values.

Visual Bugoff/400 costs $395.

▶ *Financial Technologies*
(516) 569-5767

Core International has introduced Coretape TD-P250, a parallel port 250M-byte tape drive.

According to the Boca Raton, Fla., company, Coretape TD-P250's engine incorporates a bipolar charging technique to accelerate to top speed under tape load in less than a second.

The product features a parallel port interface for universal connection to any system and an external parallel printer port for nonsimultaneous, pass-through printing while connected to a PC.

Coretape TD-P250 supports 2080 and 2120 tape cartridges for up to 250M bytes of storage.

Coretape TD-P250 costs $399.

▶ *Core*
(407) 997-6044

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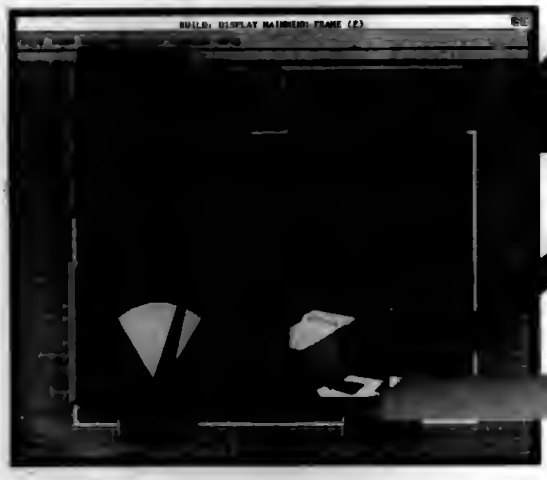

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System keeps children out of harm's way

Tool set helps identify authorized guardians

By Mitch Betts

■ One of a parent's worst nightmares is having a child abducted by someone who picks the child up from a day care center.

It is also one of the worst fears of day care providers such as the YMCA Mid-County Branch in St. Louis, one of the Midwest's largest day care centers. So the center last week began installing a PC-based "child-care security system."

"Security is our first concern," said Mary Mossing, executive director. "When someone showed up and said, 'I'm here to pick up Suzy,' we had to make a judgment call."

The new system stores detailed records about each child at the center, including photographs of the child and the parents, guardians or relatives authorized to pick up the child. Center employees can then check the system to get positive identification of the authorized individuals.

A daily report card

In addition to its security features, the system stores information on allergies, medicines and behavioral and sleep problems, Mossing said.

At the end of the day, the system lets employees print out a "My Day" report for each child to take home, she added. The report outlines the day's activities and suggests ways parents can supplement the educational curriculum.

The system was developed in just one day by Unibased Systems Architecture, Inc. (USA), a St. Louis-based software house, which has started selling its rapid application development tools as well as ready-made applications.

USA's Advanced Systems Environmental Toolset is an integrated family of object-oriented tools for building client/server systems — from the design stage to testing. It is especially well-suited to putting large, mainframe-size applications onto 32-bit client/server operating systems, such as Microsoft Corp.'s Windows NT and forthcoming Chicago, the vendor said.

The tool set is IEEE Posix-compliant, generates ANSI C code and includes its own middleware layer and relational database management system. One reason the child care application was built so quickly is that USA was able to draw on its library of reusable code for common functions, the vendor said.

The YMCA *in St. Louis uses imaging to ensure that people picking up children from day care are 'approved'*

Hospitals benefit, too

A more industrial-strength application of the tool set is at Deaconess Health Systems in St. Louis, which includes two hospitals and related clinics. The information systems staff there has built a highly complex rules-based system that allows doctors to schedule patients for a series of tests and procedures in a single call.

In essence, the new client/server system eliminates the need for hospital schedulers to look through thick manuals that spell out each department's scheduling rules, said Barbara McEvoy, supervisor of central scheduling at Deaconess. For example, some tests may require the patient to fast, while others may require special equipment.

Schedulers using the new system can ensure that the necessary rooms, tests and equipment will be available in every department the patient must visit, McEvoy said. There are other hospital scheduling systems on the market, she added, but this one has built-in conflict-resolution logic.

Deaconess will use the USA development tools for other projects, including a scheduling module for the operating room, said Pat Brennan, MIS director. "We definitely like the fact that you can prototype and make changes very rapidly," he said.

"When expert users in the departments can see the results of what they're telling the programmers, it saves a lot of time and avoids a lot of communications problems," Brennan added.

Robert L. Bowman, chief information officer at Deaconess, acknowledged that it was a calculated risk to select little-known USA for the hospital's move from mainframe systems to client/server. "But I think we found a diamond in the rough," Bowman said.

Synon to offer hybrid object-oriented/structured development tool

By Mary Brandel

Users of IBM's AS/400 who want to become acquainted but not entirely intimate with object-oriented development can soon try a development tool called Obsydian from Synon Corp.

Obsydian adds reusable business objects and class libraries to the highly structured data modeling and design methods of Synon's flagship computer-aided software engineering product, Synon/2E.

"It makes full use of inheritance, although you're still building a relational [not an object-oriented] database," said Jean Woelior, an application consultant at Richer & Associates Systems Group, Inc., a consulting firm in Calgary, Alberta. The results, she said, are "better quality code and greater productivity gains."

The tool "takes a user base who's been using structured [development methods] and moves them to object-orientation," said Michael Blechar, an analyst at Gartner Group, Inc. in Stamford, Conn.

Here's how it works:

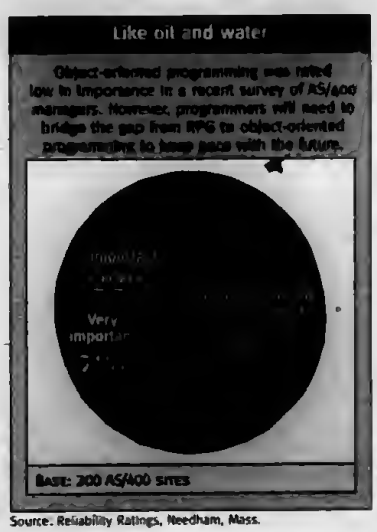
- A programmer defines a data entity for, say, a sales invoice.
- The programmer selects an object from the Synon-supplied class library that most closely matches the entity he has defined.
- He further modifies the object into what the sales order should specifically look like.
- The application is generated and deployed.

Synon calls it "demystified object-orientation. We're trying to give a view of object orientation where you don't have to be a rocket scientist," said Rick Brown, vice president of marketing at Synon.

A major question is whether AS/400 users are ready for object orientation. Some analysts said all shops will have to start paying attention to this area, particularly toward the end of the '90s.

However, "Adoption of development tools is not a high priority in most AS/400 shops," said George Herchenroether, a partner at D. H. Andrews, a consultancy in Cheshire, Conn. The sites are oriented toward packaged solutions but "their adoption of tools to surround packages is definitely picking up" he said.

"I would think any company doing development with Synon would be interested in object orientation," said Robert Dickey, vice president of information systems at Swift Textiles in Columbus, Ga. "But for us, and for a lot of shops that don't do full development work, it's not a good product because we can't use it for [existing] applications."



Source: Reliability Ratings, Needham, Mass.

Synon said it expects more than half of its 5,000 customers to migrate to Obsydian.

With Obsydian, Synon is attempting to go beyond the AS/400 base. The September release, which is written in C++, will generate C++ code for Windows clients and RPG for AS/400s. In the first quarter of next year, Synon will add C++ generators for IBM RS/6000 and Hewlett-Packard Co. 9000 servers.

The first release will support DB2/400 and Oracle Corp. databases. The later version will add Sybase, Inc. and Informix Corp. support.

Synon said it has a "two-product strategy. If you're an AS/400 shop and have a single environment, Synon/2E is right for you," Brown said.

But "if you want to go to something other than AS/400, this is the tool," Blechar said.

The tool set is $8,750 per user, with a minimum order of two copies.

Digital extends Common Object Model spec, rolls out tool set

By Martin LaMonica

Digital Equipment Corp. has extended its Common Object Model (COM) architecture to include object inheritance and has introduced a language-neutral development environment, the company announced recently at Object World in San Francisco.

Digital plans to release by the first quarter of next year a software developer's kit, code-named Pegasus, that will include an extended COM specification and a set of tools to exploit the new object capabilities, officials said.

The kit will also include a set of base class libraries that perform certain core functions, officials said. The company intends to license COM and Pegasus to systems vendors and independent software vendors worldwide.

Copycat device

Through object inheritance, developers will be able to create COM objects that mimic the original object's behavior and class structure for use in a new application, Digital officials explained.

The Pegasus environment will also allow programmers to access class libraries written in different languages, including C, C++ and Smalltalk, without changing languages, said product manager Shawn Woods. For example, a C++ developer could access a set of class libraries originally written in Smalltalk from his C++ environment of choice.

Although officials were guarded about the software technology Pegasus employs, they said the kit will include tools that render class libraries COM-compliant and thus accessible from different languages. Digital also plans to port ParcPlace Systems, Inc.'s VisualWorks and Next Computer, Inc.'s OpenStep to Pegasus, along with the Open Software Foundation's Distributed Computing Environment services, Woods said.

Because of Digital's partnership with Microsoft Corp., Object Linking and Embedding (OLE) objects in Microsoft's future operating systems will adhere to COM and Digital's object request broker Object Broker 2.5, rather than the Object Management Group-sanctioned Common Object Request Broker Architecture specification, Digital officials said. COM/OLE interoperability and a range of object technologies from the desktop to the enterprise level will draw users to the COM specification, officials said.

With a little help

"We're not trying to set standards alone. We are working with Microsoft, which has an enviable position," said Al Cooley, director of Digital's business development for enterprise object software, responding to questions of how financially strapped Digital will garner industry support for COM.

One analyst said Digital's COM development environment and tool set do not offer independent software vendors a more compelling object model and technical support than products from rival object vendors. Digital's research and development constraints and Microsoft's focus on OLE 2.0, its own object-oriented product, weaken Digital's message, said Natasha Krol, vice president and service director of advanced information management strategies at Meta Group, Inc. in Westport, Conn.

LaMonica is a correspondent at the IDG News Service

Grant OK'd for software institute

By Melba-Jean M. Valdez
MANILA

The National Computer Center (NCC) here recently received a $5 million grant from Japan to start a software development institute by next year at the University of the Philippines.

"It is a small effort from the government," said Col. Fermin Javier, NCC managing director, at the Teachers Assembly on Computer and Technology (TACT) '94 held in June. The institute, he said, will be open to information systems students from all schools.

Employees and teachers at colleges and universities offering computer courses can be trained at the institute to increase and update knowledge in information technology as well as improve their teaching skills. The institute will also develop curricula for universities that want to improve their programs. "The curricula will be bought from the best universities abroad," Javier said. In addition, platforms for computer lessons will be made available.

Software from the institute will be developed using Oracle Corp.'s Oracle, Informix Software, Inc.'s Informix and C++ running on Unix and Windows. "We will also make agreements with IBM to do the programming," he said.

Javier told teachers who attended TACT '94 that computer literacy — a component of the National Information Technology Plan 2000 — is an important ingredient in the development of the country's economy. Thus, the NCC along with academic institutions plans to push IS literacy in rural areas.

Javier said it is faster to link up with educational institutions than it would be to look for private companies. "We must produce a generation of Filipinos who will use [information technology] in their daily affairs," he said.

Outdated courses

At the same forum, Arnaldo Del Rosario, director at the college of computer science at the Ateneo de Manila University, said, "The stumbling blocks in [information technology] education are the course offerings."

Del Rosario said schools continue to teach computer courses developed in the 1960s and 1970s, making the literacy programs somewhat obsolete. Many schools are still teaching subjects that foreign companies abandoned a decade ago, he added.

Micro Focus, Inc. has announced Micro Focus CICS OS/2 Option Version 3.2 for Micro Focus Cobol Workbench, a development environment for mainframe and network-based CICS applications on OS/2.

According to the Palo Alto, Calif., company, the Micro Focus CICS OS/2 Option Version 3.2 is a complete on-line transaction processing development system with distributed processing and multitasking capabilities.

The product emulates mainframe CICS and provides a suite of development tools to create and maintain host-based or client/server CICS applications. Features include a development menu system, an integrated CICS preprocessor, single-step translation, compile and link processing, a macro generator, database support and multisession debugging.

The Micro Focus CICS OS/2 Option Version 3.2 costs $1,250 for a single-user version.

▶ *Micro Focus*
(415) 856-4161

MetaWare, Inc. has introduced the High C/C++ Compiler Version 3.2 for Windows NT.

According to the Santa Cruz, Calif., firm, the compiler produces Microsoft Corp. Windows NT-standard common object file format object modules and NT-standard CodeView-4 debugging information.

The Easy DLL feature lets developers export or import functions in a given block of code. The Easy-Thread feature lets users convert existing routines and programs using Windows NT's multithreading capability.

The product includes the Win32 Enablement Package that lets 32-bit applications created with High C/C++ Compiler run under Windows 3.1.

High C/C++ Compiler Version 3.2 for Windows NT costs $595.

▶ *MetaWare*
(408) 429-6382

Lucid, Inc. has announced Energize Programming System 3.0, a Unix programming tool.

According to the Menlo Park, Calif., company, Energize Programming System 3.0 lets developers work on a subset of a project without having to manage the entire project in the work space, reducing resource requirements and protecting the common code base.

The product is fully integrated with leading configuration management tools and provides code understanding so each developer on a team has the same view of the project code.

Energize Programming System 3.0 is available on Sun Microsystems, Inc.'s Solaris 2.x and SunOS 4.1, providing a mixed environment for users.

Energize Programming System 3.0 costs $4,250.

▶ *Lucid*
(415) 329-8400

Non-Standard Logics has announced XFaceMaker 3.0, a graphical user interface builder.

According to the Boston company, XFaceMaker 3.0 lets users design both X Window System intrinsics and C++ class libraries.

Features include dual-process architecture, fault tolerance, C++ class generation, a project management and application building module, a database module and a redesigned interface.

XFaceMaker 3.0 generates the skeleton of users' application code automatically with all initializations, memory allocation and function calls required by the interface. A debugger tests the behavior of the interface.

XFaceMaker costs $4,995.

▶ *Non-Standard Logics*
(617) 482-6393

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I WALK ALIGNED

BY LESLIE GOFF

Citizens Gas & Coke Utility may be located in Indianapolis, but its management style is pure rural New England.

This year, information technology budgets were set much the way a town might approve its budget at an annual town meeting. Departmental managers voted that a companywide electronic-mail and calendaring application should make the fiscal 1995 budget. A cutting-edge CD-ROM-based customer service application will have to wait a year or two.

Meanwhile, technology decisions at U.S. Bancorp in Portland, Ore., are made with the help of information systems liaisons who function as financial advisers. Each business unit at U.S. Bancorp works with a central IS group to assess the costs of offering new banking services, such as allowing customers to convert trust assets to mutual funds. The IS group weighs in with the available technology options and their associated spending requirements.

One company relies on the vote and the other on consultation. But they share common ground: Each has found a way to integrate IS with corporate strategy and get users to feel ownership of their systems. And in both cases, the need to keep the cost of services as low as possible requires that IS play a central and early role in major business decisions.

"This is a team-based process focused on customer satisfaction. Everyone has customers, whether internal or external, and we must satisfy all of them."

— DON LINDEMAN
President and CEO
Citizens Gas & Coke

Hear ye, hear ye

At Citizens Gas a sense of urgency drives corporate strategy for the $350 million utility. Deregulation of the utilities industry [CW, May 9] makes it imperative that Citizens Gas maintain the lowest rates possible.

Toward that end, the company began adopting total quality management techniques four years ago. The goal of each department, from customer service to IS, is to keep rates 15% below the average for other "snow belt" cities.

Staying ahead of the snow belt competition means getting an early start in the spring. So while the new fiscal year at Citizens Gas doesn't start until Oct. 1, department managers are scurrying to set the next year's plans in motion before the first spring thaw.

Representatives from each of the company's 14 business units, including four IS managers, converge in February, March and June for three sets of two-day New England town meeting-style planning sessions. The company began these sessions four years ago.

Similar to the workings of a town meeting, the sessions are set up so each of the 14 units functions as both a sponsor and a voter. The units argue for their own slice of the pie, outlining how their plan will benefit the overall effort. Then they weigh the merits of the other plans, determining how the pie is sliced for the other units.

During the course of the three meetings, the team of representatives from each department describes its vision for the company's future, outlines its strategies and negotiates its budget. The result is a consensus on a common direction and corporate priorities, as well as a companywide understanding of how the budget pie is sliced.

"This is a team-based process focused on customer satisfaction," says Don Lindeman, Citizens Gas' president and chief executive officer, who began his career at the company 33 years ago as a programmer. "Everyone has customers, whether they're internal or external, and we must satisfy all of them."

After the February meeting, when departmental representatives agree on company direction, the departmental teams each develop short- and long-term objectives. They share those objectives in the March meeting, assessing how they relate to those of other units. Teams from different departments frequently present their plans together.

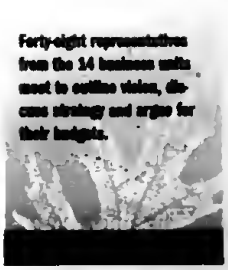
Customer service, for instance, may co-present an idea with the marketing and IS departments. The three teams would develop their plan together — drawing on one another's expertise and resources — and outline costs and a time frame in their presentation.

Following the March meetings, each of the 48 participants ranks each proposal's importance on a scale of one to five. Then in the June meetings, they decide which ones to fund.

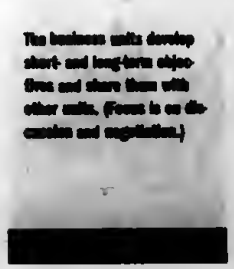
"We're no different than other companies. People do come in with their own agendas," says Bob Steuber, Citizens Gas' director of systems. "But then that comes out in front of the whole group, and there's a feeling that you are sub-optimizing the system. This year,

DEMOCRATICALLY ALIGNED AT CITIZENS GAS & COKE

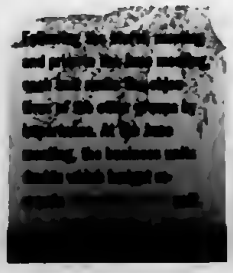
CITIZENS GAS & COKE USES A TOWN MEETING APPROACH TO SET OBJECTIVES, STRATEGY AND BUDGETS IN A SERIES OF THREE TWO-DAY MEETINGS



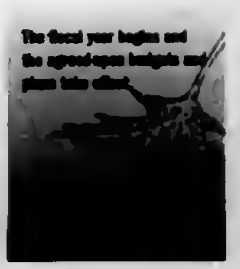
Forty-eight representatives from the 14 business units meet to outline vision, discuss strategy and argue for their budgets.



The business units develop short- and long-term objectives and share them with other units. (Focus is on discussion and negotiation.)



Following the fall meeting and prior to the June meeting, each business unit develops objectives of its other groups by negotiation. At the June meeting, the business units decide which budget requests [illegible]



The fiscal year begins and the agreed-upon budgets and plans take effect.

for instance, we had a very restricted budget, and we were probably 10% over the total amount of our budget, so we had major cuts to make. That's painful."

However, "everyone comes out of the meetings understanding why certain decisions were made. We get a common vision out of these meetings," Steuber says. "If the strategies make the cut, there's more dedication to get them done because everyone knows we've all signed off on them."

Spending money to make money

A similar dedication is emerging at U.S. Bancorp, where IS liaisons function within each business unit. These liaisons develop financial industry expertise, act as consultants and educate users about the company's technology infrastructure and capabilities.

U.S. Bancorp is the largest holding company in the Pacific Northwest, with $21.4 billion in assets and more than 400 branch offices in five states. But the task of staying No. 1 is getting harder. The challenges: declining profitability and a higher-than-average (for the banking industry) ratio of costs to services provided.

To stay on top, U.S. Bancorp has joined the ranks of banks that are increasingly turning to "noninterest" forms of revenue. These include automated teller machine fees, service charges, fee-based home banking services and so on.

To decide which new services to offer, business units call on IS to advise them about what existing systems can provide. The financial management group develops both technical and staffing requirements, evaluates the options, determines the costs in relation to expected revenue and puts together a request for proposals (RFP) if the project moves forward.

For example, when the bank decided to convert trust assets, a traditionally small, quiet area of banking, to mutual funds, which require a dynamic sales operation and tremendous processing power, it called on the IS financial management group.

The IS organization examined what information employees would need, who would need it and whether the existing infrastructure would support the processing, regulatory compliance and other factors. It then devised several options for achieving the goal.

"We look at all the alternatives," says George O'Brien, vice president and manager of the operations service group/financial management. "We'll help them get complete and accurate numbers, and they decide how to go."

The financial management group also weighs whether new services should be outsourced to get the best rate. If so, the IS group also helps seek outsourcing partners, negotiate the contract and monitor the services once in place. Consulting services from the IS group aren't free, but rates are set on a one-on-one basis. Each unit pays for its respective information technology expenditures on a charge-back basis.

O'Brien says many internal customers are now better educated about the capabilities and costs of technology. They are also more willing to accept cost limitations.

"They're buying the concept that all this technology is not free," O'Brien explains. "They understand the costs better. We have a better dialogue, and that leads to better decisions."

U.S. BANCORP

[illegible] LANDERS RECORD 10 HOW ADVICE FROM THE IS FINANCIAL MANAGEMENT GROUP:

1

Business unit looks at new product offering

2

Financial management group is called in to do the following:

DEVELOP REGULATIONS

EVALUATE OPPORTUNITIES

DETERMINE COSTS

PREPARE REQUEST FOR PROPOSAL

3

Business unit reviews options with the financial management group and decides how to proceed.

Getting to know yourself

The consultative nature of the new relationships is helping the bank identify its strategic units, O'Brien says.

"The process that we're developing will lead to an improvement of business decisions, a better understanding of our profitability and the costs of providing a service to the bank's customers," O'Brien says. "As we understand our costs, we can make better business decisions."

In the meantime, "this communication is a new and different experience in a lot of ways," O'Brien says. "As [business] unit managers start to see what the costs are, they want to know what drives those costs, and it's impossible for one side to explain something to someone who doesn't want to hear it. There has to be a willingness to listen and to explain, to answer questions about specifics and get into a better dialogue."

At each of these two companies, a better dialogue is growing around business strategies. And IS is fundamentally involved in the conversation. Consequently, each side assumes a greater sense of ownership of projects. ■

"This communication is a new and different experience in a lot of ways. As [business] unit managers start to see what the costs are, they want to know what drives those costs, and it's impossible for one side to explain something to someone who doesn't want to hear it. There has to be a willingness to listen and to explain, to answer questions about specifics and get into a better dialogue."

—GEORGE O'BRIEN
Vice president and manager
IS financial management group
U.S. Bancorp

Goff is a free-lance writer in New York.

Personnel Paybacks

Ever wonder about the return on investment of your information systems staff? Two benchmarking groups are forming to help companies find out.

By Julia King

Most IS executives could tell you down to the dollar what their companies spend on hardware and software, and maybe what they're getting in return for that money. But when it comes to the same details about IS staff, many haven't a clue — at least in terms of dollars and cents.

That, at least, is the contention of two new benchmarking groups that focus specifically on measuring the value of IS staff resources.

"Corporations spend 65% or more of their IS budget on staff, yet companies overall don't quantify how efficiently they're using that staff," says Jim Webber, president of Omicron, a consortium of Fortune 1,000 IS executives and sponsor of one of the benchmarking groups.

Webber says he believes that quantifiable data about what people do and how much time they spend doing it is critical to any measurement effort of IS resources. Nonetheless, he says a collection of data on how employees actually spend their time on the job remains rare at most companies.

Comprised of top IS managers from approximately 40 large companies across several industries, Omicron's benchmarking group is scheduled to begin work next month.

The second benchmarking group, under the direction of former Merrill Lynch & Co. Chief Information Officer DuWayne Petersen — now president of Petersen and Associates in Pasadena, Calif. — will focus on IS staffing costs at banking and financial services firms.

Both groups will collect and analyze staff data using Performa software developed by Michael-Delia, Inc., an information technology management consultancy in San Diego. Essentially a database package, Performa tracks the time staffers spend on 1,600 different IS-related tasks, such as systems design, change management and client support.

Because the system also contains hourly salary information for each worker, it can measure precisely how much certain tasks or processes cost a company.

Functional summaries

The software assesses people utilization and time and money expenditures. It then generates summaries of performance and cost-effectiveness from a functional, rather than an organizational, viewpoint. Executives can then see, for instance, whether managers are performing tasks that should be performed by lower-paid staffers, Webber explains.

Companies also have the option of leasing Performa software and collecting data for internal use only. The cost of a perpetual license ranges from $20,000 to $50,000, depending on the size of the IS organization, Webber says.

Both Webber and Petersen are hoping companies will benchmark their results against other corporations. That way a portfolio of best practices could be developed and shared across IS departments in various industries.

"Corporations spend 65% or more of their IS budget on staff, yet companies overall don't quantify how efficiently they're using that staff."

Jim Webber
President of Omicron
A consortium of Fortune 1,000 IS executives

The cost of benchmarking studies, which compare the results of about 20 companies, ranges between $6,000 for a 100-person IS department and $30,000 for a 1,000-person group. Companies pay extra — about $7,500 — to visit so-called best practices IS departments to see firsthand exactly how they work, Webber says.

To date, Petersen says, "techniques for doing meaningful comparisons of work effort across organizational boundaries have not been available. I wish I had this service when I had the responsibility for managing [information technology] service organizations."

Trouble with tracking

CIOs have mixed reactions to the notion of keeping strict time-accounting records on their staffers.

"One of the things we backed away from is stringent time accounting for systems people [because] it got to the point where if you didn't have a project number, you couldn't work," says Dave Evans, vice president of information systems at JC Penney Co. in Dallas. "Assigning a particular number to each project and billing staffers' time by project number made our books balance, but it didn't keep our business partners happy, so we dynamited that part."

On the other hand, "tracking hours can be very good for morale," says Susan Cramm, vice president of information technology at Taco Bell Corp. in Irvine, Calif.

"Since there is this sense that no one really knows what IS is doing, it's an opportunity for professionals to tell management what they're doing," Cramm says.

Webber says at least 20% of staffers and managers will resent and resist having their time and work tracked electronically.

"You'll always have resistance to detailed tracking of time and results at several worker levels," he says. "One of the keys to [implementing measurement] is assuring staffers that the results won't be used against them individually." ■

King is a *Computerworld* mid-Atlantic senior editor.

Calendar

AUG. 21-27

Partnership Conference '94. New Orleans, Aug. 21-24 — Contact: Computer Associates International, Inc., Islandia, N.Y. (516) 342-5224.

Cyberspace and the American Dream. Atlanta, Aug. 23-24 — Contact: The Progress & Freedom Foundation, Washington, D.C. (202) 484-2312.

Data Administration & Information Resource Development. Washington, Aug. 24-26 — Speaker: Ronald G. Ross, editor of the "Database Newsletter," published by Database Research Group, Inc. Contact: Digital Consulting, Inc., Andover, Mass. (508) 470-3880.

AUG. 28 - SEPT. 3

AFCOM's '94 Fall Educational Program. Chicago, Aug. 29-31 — This session will cover automated operations, current issues in data center management and client/server issues. Keynote address on "Client/Server Computing: Where Does It Lead?" will be given by Peter Schey, vice president and director of client/server logical view at Gartner Group, Inc. The program runs concurrent with IS Expo Fall '94. Contact: Peri Hoffman, AFCOM (714) 997-7966.

Client/Server '94 East. Washington, Aug. 29-Sept. 1 — The conference will focus on users, ranging from business executives to technical managers and value-added resellers and integrators. Contact: CMP Publications, Inc., Jericho, N.Y. (516) 733-6700.

Effective Methods of Systems Testing. Orlando, Fla., Sept. 1-2 — Part 2: Process for Test Execution. Contact: Quality Assurance Institute, Orlando, Fla. (407) 363-1111.

SEPT. 4-10

Manufacturing '94. Chicago, Sept. 7-14 — Topics will include networking, cost-cutting, quality improvement and technology integration. Contact: Society of Manufacturing Engineers, Dearborn, Mich. (313) 271-1500.

Video Expo/Image World. New York, Sept. 9-14 — Focus: Seminars on emerging technologies, desktop video, computer graphics and animation, corporate media production, multimedia and digital imaging and publishing. Keynotes: "Beyond Reality — New Frontiers in Computing Imaging," by Dr. Alvy Ray Smith, co-founder and president of Altamira Software Corp.; "Non-Linear Editing — Cutting Through the Hype," by Shonan Noronha, editorial director of *AV Video* and *Computer Pictures*; "Freedom, Privacy and Creative Property Rights in the Digital Age," moderated by John Rhodes, communications consultant. Contact: Knowledge Industry Publications, Inc., White Plains, N.Y. (914) 328-9157.

Institute looks at change management

Information systems executives can gain insight into how to manage technological change in their organization at the 1994 International Communications Association's (ICA) Management Institute.

The management institute will be held Sept. 11-14 at the Kellogg Graduate School of Management's James L. Allen Center at Northwestern University in Evanston, Ill. The three-day program is co-sponsored by Northwestern's Center for Information and Telecommunication Technology.

The program theme is "Managing Technological Change: Strategies for Information Systems and Telecommunications." It will take a top-down look at managing IS in a rapidly changing environment.

For more information on the 1994 Management Institute, contact ICA at (800) 422-4636.

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Members of the Royal Automobile Club's repair patrols are packing electronic manuals to get stranded motorists...

ON THE Road Again

By Elizabeth Heichler

Some of the roadside service crews patrolling Great Britain's highways this summer are getting extra help diagnosing and fixing broken-down vehicles.

The Royal Automobile Club (RAC) has just outfitted 350 of its 1,250 repair patrols with Panasonic Co.'s electronic book players. The goals of this pilot program are to save money and improve service.

The system is the CD-ROM version of a "patrolman's bible." It contains thousands of pages of diagrams and repair manuals for all of the vehicles that emergency repair crews are likely to encounter. Browsing and searching software locates information quickly to improve problem diagnosis and encourage service crews to attempt more complicated repairs, according to the RAC.

Competitive edge

The RAC hopes the system will help boost service and its competitive position in the UK. Along with the Automobile Association, the RAC dominates the market, says Ken Hartley, the RAC's information science manager. The company also hopes the system will allow it to expand its market to all of Europe.

Information for the system is provided by multimedia CD-ROM publisher Attica Cybernetics Ltd. in Oxford, England. Attica Cybernetics also updates the CD-ROM for the RAC monthly and adds an audio track, which can be played on the electronic book. The audio track is a compilation of the latest quick fixes and tricks of the trade phoned in by repair patrols.

"We were prompted by the desire to remove paper from the vehicle," Hartley says. "It takes up room, and the patrols often don't use it because they're not confident of finding the information they need fast enough."

Increasing efficiency

The RAC's patrols are under pressure to keep emergency stops down to about 20 to 30 minutes. The electronic book provides them with more information than they had in paper manuals, while also helping them make more use of it, Hartley says.

"This has improved morale incomparably," Hartley says, "because the patrols feel more confident. They know that within eight to 10 keystrokes they'll be able to find the information they need."

The RAC members say the system improves the ability to fix vehicles on the road rather than having them towed. "Most people want their vehicle to get going; they don't want it recovered," Hartley says.

The RAC has invested about 500,000 pounds ($750,000) in the CD-ROM project. This will include the nationwide implementation of the technology later this year, Hartley says.

The RAC expects to see a significant cost savings later this year when the club can stop producing hard-copy manuals and the rollout of electronic books to all emergency patrols is complete. ■

RAC roadside patrol member uses the new electronic book player to diagnose an engine problem

Heichler is the IDG News Service's European correspondent.

Intelligence Files

Fedex to go wireless

Federal Express Corp. will begin using a new wireless system this fall to manage package tracking in Las Vegas and a second city not yet named.

Fedex, the world's largest express transportation company, is the first commercial customer for AirData, the new Cellular Digital Packet Data (CDPD) service. The company will use the new wireless system to augment its private radio frequency network.

The new system is being supplied by the Wireless Data division of McCaw Cellular Communications, Inc. in Kirkland, Wash. It will track packages through Fedex's Digitally Assisted Dispatch System.

"While the RF network that we currently use for package tracking and delivery works today, we believe that we will need additional capacity and flexibility in our future networks, which can be realized with McCaw's CDPD network," says Winn Stephenson, vice president of telecommunications at Fedex.

Fedex delivers more than 2 million items in 187 countries each workday. It employs more than 100,000 people and operates 458 aircraft and more than 31,000 vehicles in its integrated system. The company reported revenue of $8.5 billion for its fiscal year ended May 31.

Source: IDG News Service

Self-service for flyers

Lufthansa German Airlines has announced plans to use self-service voucher printers for its frequent-flier program, "Lufthansa Miles & More."

The Customer Information Printers allow customers to obtain a statement of distances flown and credit received. The customers feed their membership cards into the self-service machine, which prints current frequent-flyer information on an 8-in. voucher in a few seconds.

The printers were developed by Siemens/Nixdorf and are linked to Lufthansa's central computer in Frankfurt.

Lufthansa officials say the new service has been enthusiastically received by customers in its first few weeks. Since the printers were installed, customers have requested an average of 200 statements daily. After three weeks, about 4,500 had been requested in Munich and more than 3,000 in Frankfurt.

Following the success of the pilot and acceptance tests, Lufthansa has decided to install the printers in every German airport by year's end, initially in airport lounges.

Source: IDG News Service

What's in it for me?

Ask not what you can do for my company; ask what you can do for my career.

That's the hidden agenda behind the purchasing decisions made by information systems managers, according to a study of 600 IS executives by the Connecticut Research Group, Inc., a research consulting firm in Westport.

According to the study, IS managers now rate personal considerations equal to product and business reasons when they choose one product or vendor over another.

Today, information technology vendors and consultants can "become the most favored providers" by combining their products and services "with programs that satisfy MIS decision-makers' individual job-related wants and needs," says Frank Rothman, head of the Connecticut Research Group.

The study found that because vendors have few unique, long-lasting technology or service breakthroughs, there is an overabundance of similar products and services on the market. As a result, Rothman says the message to marketers is clear: They should meet or exceed uptime and user productivity standards, but they should also provide programs that help IS management and staff increase their personal value to the company.

Group for HR pros formed

A new special interest group has been formed for human resources systems professionals working at universities and colleges.

The group is being sponsored by the Association of Human Resource Systems Professionals, Inc. based in Dallas.

The group will provide members with information on what systems are being used in institutions and their experiences with them. The group expects to help members prepare requests for proposals, select human resource information systems (HRIS) vendors, benchmark to develop appropriate standards and implement total quality management techniques, according to its chairman, Cecil Duval, director of HRIS at Georgia Institute of Technology.

For information about the group, contact the Association of Human Resource Systems Professionals at (214) 661-3727.

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60 Government - State/Federal/Local
65 Communications Systems/Public Utilities/ Transportation
70 Mining/Construction/Petroleum/Refining/Agric.
80 Manufacturer of Computers, Computer-Related Systems or Peripherals
85 Systems Integrators, VARs, Computer Service Bureaus, Software Planning & Consulting Services
90 Computer/Peripheral Dealer/Dist./ Retailer
95 Other _____ (Please Specify)

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IS/MIS/DP MANAGEMENT

19 Chief Information Officer/Vice President/ Asst. VP IS/MIS/DP Management
21 Dir./Mgr. MIS Services, Information Center
22 Dir./Mgr. Network Sys., Data/Tele. Comm., LAN Mgr. /PC Mgt., Tech Planning, Admin Svs
23. Dir./Mgr. Sys. Development, Sys. Architecture
31 Programming Management, Software Developers
41 Engineering, Scientific, R&D, Tech. Mgt.
60 Sys. Integrators/VARs/Consulting Mgt.

CORPORATE MANAGEMENT

11 President, Owner/Partner, General Mgt.
12. Vice President, Asst. VP
13. Treasurer, Controller, Financial Officer

DEPARTMENTAL MANAGEMENT

51 Sales & Mktg. Management
70 Medical, Legal, Accounting Mgt.

OTHER PROFESSIONAL MANAGEMENT

80. Information Centers/Libraries, Educators, Journalists, Students
90 Other Titled Personnel

3. Do you use, evaluate, specify, recommend, purchase: (Circle all that apply)

Operating Systems
(a) Solaris (e) Mac OS
(b) Netware (f) Windows NT
(c) OS/2 (g) Windows
(d) Unix (h) NeXTstep

App. Development Products ❑ Yes ❑ No
Networking Products ❑ Yes ❑ No

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30 Medical/Law/Education
40 Wholesale/Retail/Trade
50 Business Service (except DP)
60 Government - State/Federal/Local
65 Communications Systems/Public Utilities/ Transportation
70 Mining/Construction/Petroleum/Refining/Agric.
80 Manufacturer of Computers, Computer-Related Systems or Peripherals
85 Systems Integrators, VARs, Computer Service Bureaus, Software Planning & Consulting Services
90 Computer/Peripheral Dealer/Dist./ Retailer
95 Other _____ (Please Specify)

2. TITLE/FUNCTION (Circle one)

IS/MIS/DP MANAGEMENT

19 Chief Information Officer/Vice President/ Asst. VP IS/MIS/DP Management
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22 Dir./Mgr. Network Sys., Data/Tele. Comm., LAN Mgr. /PC Mgt., Tech Planning, Admin Svs.
23. Dir./Mgr. Sys. Development, Sys. Architecture
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OTHER PROFESSIONAL MANAGEMENT

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90 Other Titled Personnel

3. Do you use, evaluate, specify, recommend, purchase: (Circle all that apply)

Operating Systems
(a) Solaris (e) Mac OS
(b) Netware (f) Windows NT
(c) OS/2 (g) Windows
(d) Unix (h) NeXTstep

App. Development Products ❑ Yes ❑ No
Networking Products ❑ Yes ❑ No

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OPERATION OFFSHORE

With programming skills in short supply at home, U.S. corporations are teaming up with overseas partners to meet the demand for new business applications

By Martin LaMonica and Elizabeth Heichler

TIME PRESSURE AND A LACK of internal resources dogged the inception of a recent database and application project at The Chase Manhattan Bank NA. The New York-based financial institution needed to roll out critical software in the U.S. and to its Asian divisions within a few months. Unable to devote its U.S.-based information systems staff to the two-year project, top management looked offshore.

The company struck a deal with Tata Unisys Ltd. in Bombay, India — a joint venture of Indian industrial giant Tata Ltd. and Unisys Corp. — to coordinate the application and database design in Hong Kong and the U.S. and oversee the programming in India.

"We needed help," says Gene Friedman, vice president of applied technology at the bank. "When you consider getting help, you consider all the available resources."

One long-standing reason U.S. companies have looked overseas to fill their programming needs is because foreign labor tends to be cheaper than U.S. labor — often 50% to 60% less expensive. But that may not be the only reason anymore.

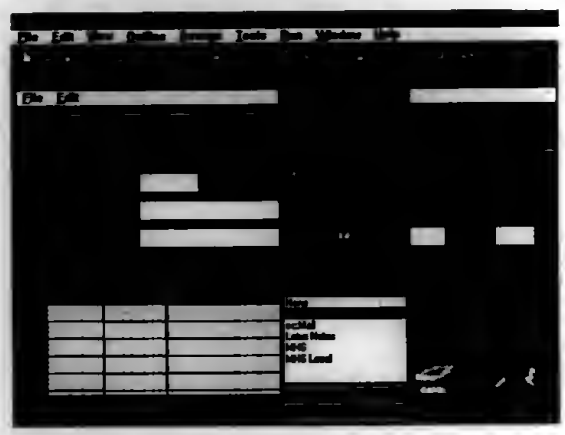
Recently, countries such as India have done major overhauls of their communications infrastructures to ease information transfer with the U.S. They've added a slew of cutting-edge business applications, such as videoconferencing, to sweeten the pot for potential development clients and are complying with quality standards such as ISO 9000.

Operation offshore, *page 76*

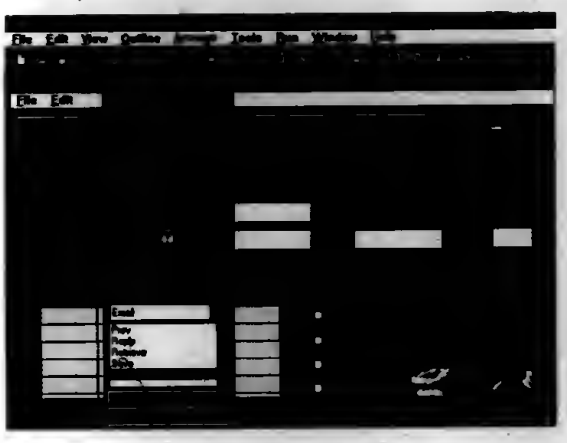
LaMonica and Heichler are IDG News Service correspondents.

1 Relax and take a deep breath. SQLWindows® is your quickest way to build and deploy problem-solving applications just like this one. For the quickest start, choose a QuickForm to lay out your application and make all the appropriate connections.

2 QuickForms let you choose data from any database, identify fields and automatically create master detail links. A simple button click generates your QuickForm. By the way, xBASE and Paradox® data drivers are included to help desktop developers move up.

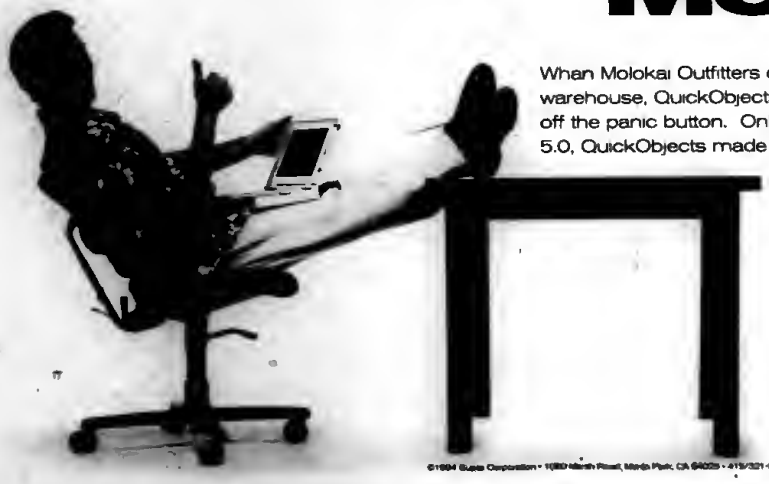


5 Painless workgroup integration is just a point-and-click away. Select the QuickEmail object, choose your mail system from the options listed and drop an e-mail data source into your form. Now users anywhere on the network can be notified when an order affects them or requires some action on their part.



6 For instance, each order will require credit approval. This calls for an e-mail QuickObject, a pre-defined pushbutton with built-in code to execute e-mail tasks. To run credit checks via e-mail, choose the "Send" e-mail QuickObject and drop a "Send" button on your form's toolbar. Now any user of the application will be able to notify the Credit Department when an order is placed and secure their approval to ship – all via e-mail without leaving the application.

How QuickObjects™ Molokai from



When Molokai Outfitters opened their new branch warehouse, QuickObjects from Gupta kept their finger off the panic button. Only available in SQLWindows 5.0, QuickObjects made sure Molokai's critical sales order entry application got delivered in a flash!

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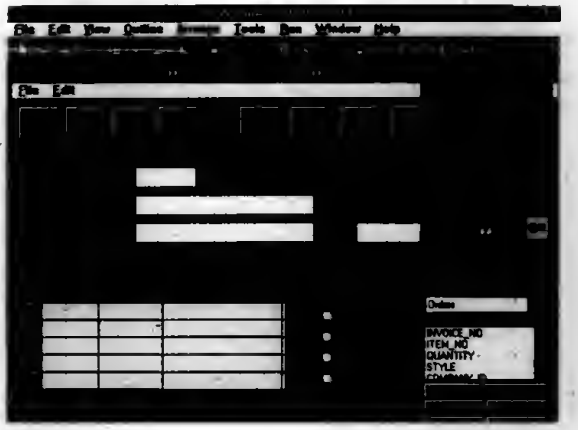
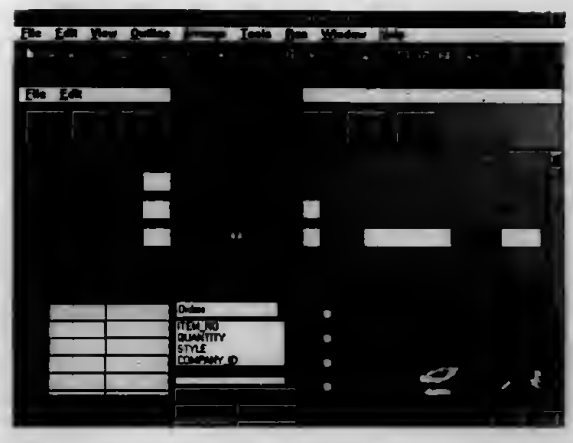
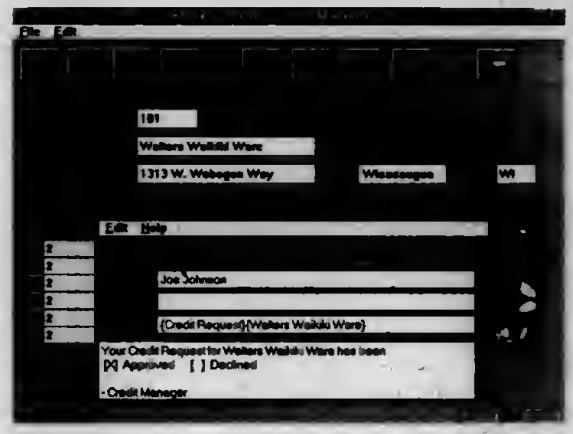


3 Next, customize your QuickForm by choosing QuickObjects from the tools palette. Each QuickObject chosen will be automatically linked to your data sources. In this case, just drag and drop a QuickRadioGroup so users can select shirt colors with intuitive radio buttons.



4 What good are color selections in a Hawaiian shirt company if your can't see them? SQLWindows applications can easily incorporate graphical data from any file, OLE server or database, with the QuickPicture QuickObject. Just place and size the picture box in your form. See? You still haven't written a lick of code!

7 Now, test your application. Click on the "Run" button in the SQLWindows toolbar. Any errors will be flagged by the internal debugger and a runtime application will be created. Then, for blazing speed, just punch the adjacent SQLWindows Compiler button to tap the performance of this industry's first 4GL compiler.



8 Congratulations. You've just built a powerful client/server, mail-enabled application that integrates graphical and SQL data anyone can use. And you did it in less than 15 minutes! Now, Walter's *Waikiki Ware* in Wisconsin will get the 72 dozen Outrigger shirts they need by next week and you'll be modeling Molokai Outfitters' latest styles on the very beaches that inspired them.

from Gupta kept losing its shirt.

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Operation offshore

CONTINUED FROM PAGE 73

Perhaps most important for U.S. companies starved for certain skills, foreign developers are training workers in the latest technologies, such as client/server application development.

Tata Consulting Services has added high-speed data lines and videoconferencing facilities to its four major development centers in India, says Yash P. Sahni, president of the Bombay company.

For Chase Manhattan, such "dramatic improvements" in India's international communications infrastructure, including satellite connections to the U.S., are a key reason its project is proceeding well, Friedman says.

Communication gap

Such improvements are important because foreign infrastructures have a history of being dicey at best. For instance, until recently, India's state-owned operator, the Department of Telecommunications, could not supply a sufficient number of reliable, high-speed data links abroad.

While some older, established software development firms, such as International Informatics Solutions in Delhi, had set up their own 64K bit/sec. lines for overseas communications, the inability to establish a reliable telephone line or send large chunks of data made cross-continent partnerships nearly impossible, according to end users and industry officials.

But recently installed high-speed satellite links are expected to boost India's proportion of offshore work, according to the "1993-94 Strategic Review of the Software Industry in India," a report from the National Association of Software and Service Companies (NASSCOM) in Delhi. Currently, on-site services amount to about two-thirds of the $198 million (U.S.) in export earnings from software services.

The Indian government is also spearheading the construction of several "software technology parks" across India — in Bombay, Bangalore, Calcutta and Delhi. The parks feature 64K bit/sec. satellite-based data communications, fax capabilities, electronic mail and Internet access. Indian software houses that up residence in these parks get tax breaks from the government.

"The telecom advances are really facilitating the [U.S.'] use of [Indian programming] resources," says Frank Susino, senior vice president of technical services and planning at Institutional Group information Corp. (IGIC) in Great Neck, N.Y., a financial services and data processing center for several savings banks in the New York area. IGIC farmed out part of a systems development project late last year to Tata Consulting Services.

In previous dealings with Indian offshore work, IGIC brought Tata Consulting Services programmers to New York to collaborate on projects, stretching out the development process. Now, IGIC leases a 9.6K bit/sec. channel on a private satellite to send E-mail.

"Now we assign tasks to the program director in our office, who can instantaneously distribute the work here or to engineers over there," Susino says.

The skills chase

Besides improvements in infrastructure technology, offshore firms are beefing up programmers' skill sets to create a ready supply of workers in the critical area of client/server. U.S. companies are hungry for experts in Unix, C++ and object-oriented programming.

According to a recent Forrester Research, Inc. survey of 51 Fortune 1,000 companies in the U.S., those skills are in short supply. While 86% of the respondents' development staffs were qualified in

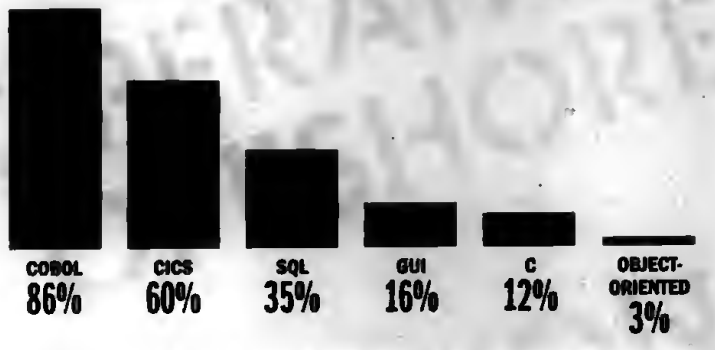
Operation offshore, *page 80*

OFFSHORE WORKERS SEEK TO FILL U.S. SKILLS GAP

Many U.S. high-technology workers lack the GUI, C and object-oriented programming skills needed to move their companies into the future. Offshore developers are beefing up their talents in these areas.

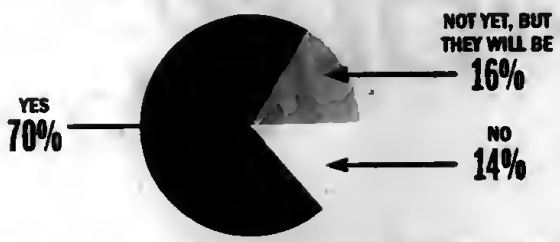
With so many companies experiencing a skills shortage in critical client/server areas . . .

What percent of your developers are qualified in:



. . . there's much concern about future development on smaller platforms.

Are your development plans limited by the current skills of your staff?



Source: Forrester Research, Inc., Cambridge, Mass.

Base: 51 Fortune 1,000 companies

"If we weren't using state-of-the-art technologies, we wouldn't survive in this market."

DEWANG MEHTA
EXECUTIVE DIRECTOR
NASSCOM
DELHI, INDIA

GETTING SPECIFIC

Besides reliable communications – satellite links and perhaps a backup electronic-mail account for sending code in a pinch – a well-defined, detailed specification plan is the key element when making an offshore vs. on-site decision, end users say.

"It's a question of how well you define your specifications and test your software. The issues are the same as if you use your own people," says Gene Friedman, vice president of applied technology at Chase Manhattan. "It invariably comes back to the same testing/feedback loop."

Project managers and marketing staff typically make short trips to company sites abroad to better define design specifications and install software that has been developed offshore, end users and Indian government officials say.

Some IS managers maintain, however, that reliable communications cannot overcome the inherent logistical challenges of coordinating a project in different sites across the globe. "Since you don't have a group of users with you all the time, prototyping is kind of hard to do offshore," says Orville Trembley, MIS director at manufacturer York International Corp. in York, Pa.

Ken Sharma, a senior partner at I2 Technologies, agrees. He says customer-driven development can be achieved only if user support and development groups are side by side.

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Burton Grebin, M.D.
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In the information market, this much is clear: Vendors make the products. IS managers make the decisions.

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Operation offshore

CONTINUED FROM PAGE 76

Cobol, only 12% knew C, and only 3% knew object-oriented programming (see chart page 76).

"You don't hear of any C++ programmers getting laid off," says Srindhar Alse, a programmer at PSI DataSystems Ltd. in Bangalore who worked on a U.S. assignment migrating mainframe Cobol applications to Windows and C++.

Access Computers, Inc. in Detroit had trouble finding experienced C++ programmers, vice president Mark Murphy says. It turned to Indian programmers and will now depend almost entirely on offshore development in Bombay for future versions of Wintegrity, its multimedia point-of-sale software written in Visual C++, Murphy says. Access expects to slash development costs by one-fifth.

"Systime [Computer Systems] is doing the meat of the work over there," Murphy explains. "They do the coding, and once [the program] gets in the beta and tweaking stage, we . . . take over code."

"If we weren't using state-of-the-art technologies, we wouldn't survive in this market," says Dewang Mehta, executive director of NASSCOM.

To keep their operations on par with Western competitors, Indian software houses are working on conforming to ISO 9000 quality standards, according to Jon Hatton-Smooker, European director of the Bureau Veritas Quality International in London.

In assessing a company for ISO 9000 certification, Bureau Veritas performs an audit of the technical management to make sure the firm has a suitable quality management system in place. Certification in the software business typically covers areas such as design, development, manufacturing and installation.

International Standards Organization (ISO) conformance "is very important to us. We don't view TCS as a body shop but as a technology partner," says Susino, whose company has worked with Tata Consulting Services for nearly 15 years.

What level of capability?

But critics of foreign programming say the Indian industry is still one step behind the U.S. in technology leadership and can provide only fairly routine development work. "As long as the U.S. is the primary market for [information technology] and we continue pushing the envelope, offshore looks like a great idea, but practically, it's not that attractive," says Ken Sharma, a member of the American Council on Competitiveness and a senior partner at Dallas-based software developer I2 Technologies.

Others argue that no matter what the quality and cost of offshore development, it should be curtailed to prevent the loss of U.S. jobs. "The government should take a hard look at offshore programming before it siphons off corporations' money and diminishes the number of jobs" in the U.S., says Lou Buonincontri, a software consultant in Valley Cottage, N.Y. He suggests the U.S. levy taxes on foreign software services to bring them in line with those in the U.S.

But ultimately, some feel the controversy over the threat to U.S. jobs from foreign programmers is a storm in a teacup.

"There's enough work for everybody because the needs of the software industry are phenomenal," says Nandan Nilekani, deputy managing director of Infosys in Bangalore. ■

"There's enough work for everybody because the needs of the software industry are phenomenal."

NANDAN NILEKANI, DEPUTY MANAGING DIRECTOR, INFOSYS, BANGALORE, INDIA

RemoteWare, and the CONVERSION OF JARED FARRELL.

A skeptic FROM WAY BACK, Jared Farrell the Salesman had outlived more than one attempt at automating field communications. The near-daily software updates. Nightly communication sessions that didn't. Inventory that wasn't. Prospects that...weren't.

So the fact that something called RemoteWare* had been implemented to automate sales processes for farflung laptop jockeys like himself had held little charm for Farrell. A client/server system built with software tools already happily in use in hundreds of large companies worldwide, with automated dial-up communications for transporting centrally-created electronic forms, documents and reports between home office legacy systems and even the most remote PCs? Terrific. Plus routing and query facilities to make sales-critical information simple to get and easy to use...on the road. Excuse me?

But within just days of the fading hook shot that sent the CIO's announcement memo into Farrell's round file, he was using the new applications electronically dispensed by RemoteWare. Entering daily orders, filing expenses, and penning a humble note of thanks to the CIO, from 30,000 feet. All quietly and automatically delivered by RemoteWare while he slept. A fitting complement to the inimitable selling routine of one Jared Farrell. Indeed.

Now, as he slid into the Central Office Staff Room six months later and five minutes late, Farrell watched the eyes of the room swivel towards him, like half a volley at Wimbledon. And the CIO and VP of Sales were headed his way with...a plaque? "Jared Farrell, Salesperson of the Year," it read. Salesperson of the Year. Imagine that.

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What's in the cards?

How do you fit into the picture when your company plans to move to a new environment? While management may be hard-pressed to answer this in the early stages, it helps to know what's going through their minds.

By Leslie Goff

It's been a long, hot summer at Manhattan-based Coach, a maker of leather accessories. The information systems team is working out a new technology strategy to develop a framework that more closely aligns IS with the company's business and speeds up application development.

Sherri Pressburger, senior manager of application systems, spoke recently about staffing concerns as the company solidifies plans to migrate away from an IBM mainframe-dominated environment. While the new platform hasn't been chosen, she advises her staff to be open-minded and flexible.

What stage is the company at in devising its new technology strategy?

The plan will be completed by September. The dominant technologies we're considering are client/server and more mature midrange platforms. Our main goal is to develop a plan to more effectively utilize information technology to meet business objectives.

What are your major staffing concerns?

We must determine to what extent existing staff skills will be able to meet future needs. We'll probably focus more on the actual skills mix. For example, we'll need business area expertise, project management and specific technical skills.

What organizational structure do you envision?

It's important for it to be designed to foster ongoing relationships with each business area. Specific [application project] team members will be aligned with specific business areas. To a certain extent, that's how we're organized today. We will continue to enhance that approach.

What's the view on training existing staff vs. hiring new staff?

It's likely that we'll need additional resources because as we develop new systems, we must maintain existing ones. Our emphasis will be on training current employees in new technical skills.

That could include bringing in resources on a temporary basis, for instance, to handle maintenance or expertise to help us get up to speed with the new technologies.

How will staffing concerns shift as you near implementation?

I'm concerned about the availability in the marketplace of people who possess the technical skills we'll need. We'll also want people with business experience in our industry because we're basing this whole plan on the principle that IS works in partnership with the business.

Will business experience be essential to every role?

Business skills will have different degrees of importance. In a junior programmer/analyst position, business knowledge and expertise may not be critical. For a team leader, business acumen will be more important. For someone in a key IS management role, it becomes critical.

How do you assess candidates' business experience?

I want to know what functional areas they've supported and worked with directly. To what degree did they interact with business users? Were they programmers with no exposure to business users, or were they key liaisons? Did they have prior work experience in a non-IS role within the industry?

What can development staffs in similar situations do to ensure their marketability?

They must keep abreast of trends outside of their environment, such as strides in technology, changes in the way business is conducted in their industry and new ways of doing things in different functional areas of the company.

I think companies are willing to retrain workers — and Coach is — but the technical skills are just one aspect that companies are looking for. ■

Goff is a free-lance writer in New York.

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When users take Notes

By Bronwyn Fryer

WHEN END USERS START DEVELOPING THEIR OWN APPLICATIONS WITH LOTUS' NOTES, IS MANAGERS SHOULD TAKE A FEW PRECAUTIONS, THEN GET OUT OF THE WAY

Ask Price Waterhouse Chief Information Officer Sheldon Laube about his information systems management philosophy, and you'll get an earful. "For companies to succeed," he insists, "IS departments must put malleable tools into the hands of smart people who know how to serve customers."

One such tool, Laube says, is Lotus Development Corp.'s Notes. At Price Waterhouse, 23,000 employees, including systems managers, tax experts and secretaries, develop their own project management systems, bulletin boards and other databases in Notes. In fact, almost all of the 30 Notes applications produced monthly are built by end users. Less than 10% of the IS staff does Notes development.

"The idea of putting application development in the hands of users was our specific strategy," Laube says. "We wanted to create the opposite of the typical IS structure."

Laube's attitude is exceptional, if not radical. To most IS managers, turning application development over to users is nothing short of harrowing.

While empowering users sounds good in theory, it's another thing to actually hand over the store, says Bill Wood, assistant director of scientific computing at SmithKline Beecham Corp.'s research and development arm in King of Prussia, Pa. "You can't just open up the system completely to users. You would run into security and control problems," he says.

Nevertheless, with an estimated 900,000 users worldwide — up from 750,000 in 1993 — Notes isn't going away. Trying to stem the flow of departmental Notes applications is like trying to stop a tidal wave.

IS managers responsible for overseeing Notes applications find they often shift responsibilities from developers to project managers. Linda Jason, a workgroup administrator at Eaton Corp. in Eden Prairie, Minn., says that since the firm implemeoted Notes more than a year ago, she does little development work. "Half my time is spent managing end-user development projects," she says. "The rest is spent in training."

Once users are up and running on Notes, the tidal wave hits, IS managers say. If IS takes a proactive role in establishing guidelines, less maintenance will be required later.

A speedy start

Another way to help users develop applications quickly is to create a list of standards for access control lists, formats and other matters. "People need to get going fast," Wood says. "So we set up a question and answer checklist so they can know which way to go with their applications."

All applications should be reviewed — especially if stored on the network — to ensure they run correctly, fields are properly placed and the right security controls are included. Depending on how many iterations the application goes through between the user/developer and IS, a database can take anywhere from 15 minutes to several days to finalize for distribution.

Finally, because distributing and maintaining databases can be costly, Laube recommends setting up a chargeback system for Notes applications stored on a network. "Otherwise, you could have a proliferation of little databases that cost money to maintain," he says.

With application development in users' hands, it would appear that Notes databases could easily be duplicated throughout an organization, putting further pressure on resources. However, this doesn't worry Laube.

"People seem to think that the greatest sin is in duplication of effort," he says. "But the greatest sin is in not doing your job for your client. When you eliminate duplication and try to come up with a more generalized application that works for everyone, you have something that helps no one."

Besides, he insists, "we're talking about applications that take only hours to build and that are very finely tuned to the specific needs people have. That's what makes them good." ■

Fryer is a free-lance writer in Boulder Creek, Calif.

Keeping order

IS MANAGERS RECOMMEND A SERIES OF EASILY ENFORCED CAUTIONARY MEASURES WHEN USERS DEVELOP NOTES APPLICATIONS

- Establish a list of standards, rules and procedures for developing and disseminating applications.
- Review any applications stored on network servers.
- Keep a watchful eye on system and network resources.
- If necessary, implement a charge-back system for applications that are distributed to outside departments.

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PROGRAMMER ANALYST (Ref. 75494) to consult with clients to ascertain & define their business requirements or problem areas & utilize technical expertise to provide solutions to clients' needs; analyze, design, develop & implement computer software for clients' EDP systems; support PDGS/FAST Finite Element Modeling System; develop & enhance existing automotive software & solid shading options; develop next generation ACIS based solid model finite element package to support new modeling approaches such as shape optimization & "P-method" analysis; work on a variety of hardware platforms running UNIX, & programming in FORTRAN & C. Mechanical Computer Aided Engineering, solid modeling on Pro/ENGINEER, EUCLID and USR and Finite Element Modeling; develop user software documentation & create graphical user interface, & develop surface & geometry related algorithms; Reqs. Bach. in Comp. Sci., Comp., Electrical or Electronic Engineering, Systems Analysis or its equiv. & 2 yrs. exp. in job offered or 2 yrs. related exp. as a Programmer, Systems Programmer, Programmer/Analyst, Systems Analyst, Software Engineer, Consultant or Mechanical Computer Aided Engineer. Will accept 3 yrs. college ed. plus 3 yrs. exp. in job offered or related occup. in lieu of req'd ed. & exp. Related exp. must include, in whole or part, Mechanical Computer Aided Engineering (MCAE) & Programming, Solid Modeling & Finite element analysis; also using C, UNIX, Pro/Engineer & UGS. $38,500/yr. 40 hr/wk., 8:30a-5p.

PROGRAMMER ANALYST (Ref. 75494) to consult with clients to ascertain & define their business requirements or problem areas & utilize technical expertise to provide solutions to clients' needs; analyze, design, develop & implement computer software for clients' EDP systems; analyze, design & develop Balance Transfer Tracking system, enhance the Response Tracking System for a credit card processing company; interact with the user and preparing the requirements; analyze & design summary databases in DB2 using Case Tool; design business logic for front-end LOTUS 123 based interface & back-end COBOL2-DB2 based processes; prepare testing strategy, high level & detailed specifications of the processes; test plans and using CA of the product; & architect (support) during development & implementation of the system using TSO, ISPF, COBOL 2, DB2, JCL, SYNCSORT & FTP (File Transfer) under MVS/ESA on IBM 3090 and SYSTEM ARCHITECT (Case Tool), Microfocus COBOL Workbench, XDB on PC. Reqs. Bach. in Comp. Sci., Comp., Electrical or Electronic Engineering, Systems Analysis or its equiv. & 2 yrs. exp. in job offered or 2 yrs. related exp. as a Programmer, Systems Programmer, Programmer/Analyst, Systems Analyst, Software Engineer, Consultant, Service Provider Executive, or Analyst Programmer. Will accept 3 yrs. college ed. plus 3 yrs. exp. in job offered or related occup. in lieu of req'd ed. & exp. Related exp. must include, in whole or part, working on IBM 3090 using COBOL II, DB2, MVS/ESA, also using XDB, MicroFocus COBOL Workbench, IBM PC/AT, JCL. $62,000/yr. 40 hr/wk., 8:30a-5p.

PROGRAMMER ANALYST (Ref. 75494) to consult with clients to ascertain & define their business requirements or problem areas & utilize technical expertise to provide solutions to clients' needs; analyze, design, develop & implement computer software for clients' EDP systems; design, develop, implement & install a full fledged order entry and sales support desktop application development using client-server architecture on Unix/Sun platform programming techniques, PowerBuilder 3.0, Oracle 7.0 & OECTOOLS/RPC Interface/TCP/IP, write interfaces to other windows applications using DDE, MS C++, SDK & TCP/IP & network interfacing, RPC facilities on WAN (Wide Area Net.) & GUI design based on available standards, perform quality assurance & generate test plans & carry out whole box testing, system/integration testing. Reqs. Bach. in Comp. Sci., Comp. Engineering, Electrical Engineering, Electronic Engineering, Systems Analysis or its equiv. & 2 yrs. exp. in job offered or 2 yrs. related exp. as a Programmer, Systems Programmer, Programmer/Analyst, Systems Analyst, Software Engineer, Consultant, System Executive, Software Consultant, or Project Trainee. Will accept 3 yrs. college ed. plus 3 yrs. exp. in job offered or related occup. in lieu of req'd ed. & exp. Related exp. must include, in whole or part, using ORACLE 6.0, C++, TCP/IP, developing Quality Assurance Standards. $59,000/yr. 40 hr/wk., 8:30a-5p.

PROGRAMMER ANALYST (Ref. 73794) to consult with clients to ascertain & define their business requirements or problem areas & utilize technical expertise to provide solutions to clients' needs; analyze, design, develop & implement computer software for clients' EDP systems; study & analyze Underwriter Processing System for an insurance company for lines of business auto, property, crime & general liabilities, develop front end application in Visual Basic & Visual C++ which communicates with COBOL programs written for IBM 3090 using Windows Communication Library; develop interface between front end application and other databases using ODBC, IBM 3090, windows programming and Windows Communication Library; SQL Server and OS/2 APPC; Reqs. Bach. in Comp. Sci., Comp., Electrical or Electronic Engineering, Systems Analysis or its equiv. & 2 yrs. exp. in job offered or 2 yrs. related exp. as a Programmer, Systems Programmer, Programmer/Analyst, Systems Analyst, Software Engineer, Senior Systems Engineer or Consultant. Will accept 3 yrs. college ed. plus 3 yrs. exp. in job offered or related occup. in lieu of req'd ed. & exp. Related exp. must include, in whole or part, using MS-WINDOWS, C++ & DOS. $44,000/yr. 40 hr/wk., 8:30a-5p.

PROGRAMMER ANALYST (Ref. 75494) to consult with clients to ascertain & define their business requirements or problem areas & utilize technical expertise to provide solutions to clients' needs; analyze, design, develop & implement computer software for clients' EDP systems; analyze, design, develop an Integrated Welfare System; data flow, database & module design; must with users to gather requirements for developing multiple subsystems; implement system using DB2, IMS/DC, VSAM, REXX, JCL, FILE-AID, PRO-EDIT & VS COBOL II on IBM 3090 under MVS/XA operating system & TELON, ADWVS, MF COBOL, ANIMATOR, XDB & ADW (AWS/DWS) on IBM PC/AT compatible machine under OS/2 in LAN environment; Reqs. Bach. in Comp. Sci., Comp. Engineering, Electrical Engineering, Electronic Engineering, Systems Analysis or its equiv. & 2 yrs. exp. in job offered or 2 yrs. related exp. as a Programmer, Systems Programmer, Programmer/Analyst, Systems Analyst, Software Engineer, Consultant or Developer. Will accept 3 yrs. college ed. plus 3 yrs. exp. in job offered or related occup. in lieu of req'd ed. & exp. Related exp. must include, in whole or part, system development on IBM mainframe under MVS/ESA operating system using DB2, VSAM, REXX, JCL, VS COBOL II, FILE-AID; $37,000/yr. 40 hr/wk., 8:30a-5p.

PROGRAMMER ANALYST (Ref. 75494) to consult with clients to ascertain & define their business requirements or problem areas & utilize technical expertise to provide solutions to clients' needs; analyze, design, develop & implement computer software for clients' EDP systems; analyze, design & develop integrated welfare system; data flow, database design, module action, technical support & overall design of application; meet with user to gather requirements for following a well documented user friendly system using DB2, IMS/DC, VSAM, CDS-TEST, FILE-AID, JES2-JCL, ASENG-AID, TSO ISPF, PRO-EDIT, REXX & VS COBOL II on IBM PC-AT compatible; Reqs. Bach. in Comp. Sci., Comp., Electrical Engineering, Electronic Engineering, Systems Analysis or its equiv. & 18 mo. exp. in job offered or 18 mo. related exp. as a Programmer, Systems Programmer, Programmer/Analyst, Systems Analyst, Software Engineer or Consultant. Will accept 3 yrs. college ed. plus 3 yrs. exp. in job offered or related occup. in lieu of req'd ed. & exp. Related exp. must include, in whole or part, analysis, design, developing & system testing of various personnel, financial & welfare applications on IBM mainframe using DB2, VSAM, REXX, JES2-JCL, VS COBOL II, FILE-AID, COBTEST, $37,000/yr. 40 hr/wk., 8:30a-5p.

PROGRAMMER ANALYST (Ref. 74694) to consult with clients to ascertain & define their business requirements or problem areas & utilize technical expertise to provide solutions to clients' needs; analyze, design, develop & implement computer software for clients' EDP systems; analyze, design & develop integrated Welfare system; meet with users to gather requirements, data modeling, data flow design, process modeling, program & provide technical support, for the reinsurance Table subsystem on IBM 3090 & IBM Compatible AS/400 using MVS, COBOL II, DB2, JCL, IMS/DC, REXX, ADW CASE TOOLS, XDB & TELON. Reqs. Bach. in Comp. Sci., Comp. Engineering, Electrical Engineering, Electronic Engineering, Systems Analysis or its equiv. & 2 yrs. exp. in job offered or 2 yrs. related exp. as a Programmer, Systems Programmer, Programmer/Analyst, Systems Analyst, Software Engineer, Association Information Technology Engineer or Consultant. Will accept 3 yrs. college ed. plus 3 yrs. exp. in job offered or related occup. in lieu of req'd ed. & exp. Related exp. must include, in whole or part, working on Mini-PC and using REXX, JCL, MVS DB2 & COBOL. $38,000/yr. 40 hr/wk., 8:30a-5p.

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PRAXIS

Channel update:

Mail order

By Julie Hart

If you're prone to let your fingers do the walking, mail order is for you. And you're not alone.

Over the next five years, mail-order revenue is expected to increase by almost $3 billion, according to analysts at BIS Strategic Decisions in Norwell, Mass.

"It can be beneficial to shop by mail if buying a few systems [or other items] at a time," says Jennifer Munson, a research analyst at WorkGroup Technologies, Inc. in Hampton, N.H.

But while the promise of easy, convenient shopping continues to fascinate buyers, analysts see mail order as just a small piece of corporate acquisitions, which range from PCs and workstations to off-the-shelf software.

So don't expect to give up traditional channels anytime soon, especially when buying large quantities. "When purchasing in volume, traditional channels make the most sense since you can expect to receive special pricing discounts," Munson says.

Still, if you need only a few items and you want them in a hurry, mail order is fast and convenient.

Quick and easy

In fact, the most prudent use of mail order is for quick and customized solutions, analysts say. "One of the best things about mail order [vendors] is that they'll build [systems] to order. This can save time, which translates to money," says Jeffrey Henning, associate director of personal systems at BIS Strategic Decisions.

Many suppliers, for example, will preload software and equip PCs with specific amounts of memory, a strategy that provides an edge over traditional channels. Sometimes sales tax and delivery charges can also be avoided.

But as build-to-order systems become part of traditional dealer channels, users can expect to see mail order erode somewhat, Henning says. "We see mail order holding steady over the next year as far as market share goes, then declining thereafter," says David Goldstein, president of Channel Marketing Corp. in Dallas. "There are far more options that are increasing competition."

And the jury is still out on price and product availability advantages. Historically, mail order has provided significant advantages in these areas.

"Most mail order companies have a broad selection of products that represent leading-edge, advanced technology at a good price," Henning says. However, Goldstein counters that "you used to be able to save money by going through Dell and Gateway rather than IBM. Now, price is pretty equal. That's because availability is much greater in other places than before."

Just a matter of time

ATM technology is just now entering the market. Within 18 to 24 months it will reach commodity status, predicts Peter Raulerson, president and CEO of Para Technology in Bellevue, Wash. "Within three years, you can expect to see 15% to 20% of ATM product sales through mail-order channels," he says.

Its value for the corporate buyer continues to be quick turnaround and build-to-order options. Traditional channels, however, still make the most sense when buying in volume.

But as we wait for traditional channels to add similar offerings, mail order's popularity is likely to grow, largely because of the availability of brand-name and leading-edge products, analysts say.

"It used to take five years before a product hit the majority of mail-order catalogs," says Peter Raulerson, president and chief executive officer of Para Technology in Bellevue, Wash. "Today, every type of product introduced hits commodity status within three years."

Growing market

Asynchronous Transfer Mode (ATM) technology, for example, is just entering the market, and Raulerson says it will reach commodity status in 18 to 24 months.

"Within three years, you can expect to see 15% to 20% of ATM product sales through mail-order channels," he says.

But this doesn't mean that someday mail order will represent 100% of the acquisition channels. "If you line up all of the Fortune 1,000 companies, you'll find a mix of technology users," Raulerson says.

Early adopters, for example, won't rely on mail order because they need a product before it hits the mail-order channel. Late adopters, on the other hand, may still want a salesperson to call on them to discuss the technology, Raulerson says.

For those who choose mail order, Randal Giusto, a senior analyst at BIS Strategic Decisions, recommends doing your homework. "Know what model and brand of product you want, then pick up the catalogs to find the best price and fastest delivery," he says.

He also advises corporate buyers to avoid discontinued and outdated technology. "A lot of 'fire sale' stuff exists in catalogs, such as last quarter's or even last year's models," Giusto says.

"You have to have a certain degree of confidence and [technology] understanding when buying through this channel," says Laura Curran, director of research at Merrin Information Services, Inc. in Palo Alto, Calif. "Only then is it a viable way for divisions of large corporations to shop." ■

Hart is a free-lance writer in Sunnyvale, Calif.

End-user spending★

Total U.S. PCs/workstations (in billions)

	1994	1999
VARs	$4.93	$7.98
Dealers	$13.36	$16.64
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Other	$2.05	$1.75
Total	$37.32	$53.17

SOURCE: BIS Strategic Decisions, Norwell, Mass. ★Includes all buyers

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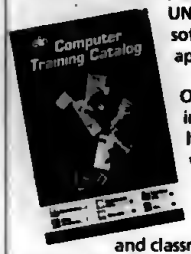

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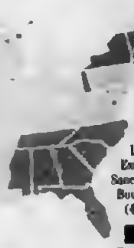

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Gainers

Percent

4TH DIMENSION	116.0	NEWBRIDGE NETWORKS CORP.	-32.0
MATHSOFT	33.3	PINNACLE MICRO INC.	-17.6
PACKTEL INC.	33.3	SOFTWARE PUBLISHING CORP.	-15.6
KNOWLEDGEWARE INC.	33.3	STERLING SOFTWARE INC.	-14.2
COMPUTER NETWORK TECH.	25.6	PENRIL DATA COMM NETWORKS	-12.9
INTELLIGENT INFO. SYSTEMS	25.5	SAPIENS INTL. CORP. N.V.	-12.5
MERISEL	22.4	QUARTERDECK OFFICE SYS.	-11.6
BOLT, BERANEK & NEWMAN	22.0	POWERSOFT	-11.2

Dollar

SCIENTIFIC ATLANTA INC.	3.63	NEWBRIDGE NETWORKS CORP.	-13.75
4TH DIMENSION	3.03	CABLETRON SYSTEMS	-6.00
HEWLETT PACKARD CO.	2.63	POWERSOFT	-4.88
BOLT, BERANEK & NEWMAN	2.25	STERLING SOFTWARE INC.	-4.25
LOTUS DEVELOPMENT	1.75	PINNACLE MICRO INC.	-2.00
ANALOG DEVICES INC.	1.75	SYNOPSYS	-2.38
AMERICAN MGMT. SYSTEMS(H)	1.63	CHIPCOM CORP.	-2.25
MERISEL	1.63	ATMEL CORP.	-2.10

[redacted]

Sungard stock ripe for recovery

In the past year, a spate of companies has moved to protect their business data by preparing contingeocy plans and signing contracts with disaster-recovery service vendors. But investors have yet to flock to one vendor: Sungard Data Systems, Inc. (SNDT) in Wayne, Pa.

"The stock has kind of lagged, basically gone nowhere for a year," said Stephen McClellan, an analyst at Merrill Lynch Equity Research in New York. "One wonders why it's so lackluster. Their fundamentals are quite good, and new contract bookings are quite impressive."

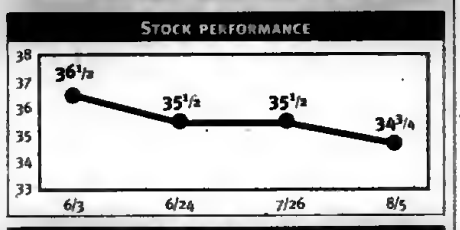
With new bookings the best they have been in three years, McClellan said he expects the growing disaster-recovery market, including **Comdisco Disaster Recovery Services** and **IBM Business Recovery Services** [CW, June 27], to bring a recovery of sorts to Sungard shares. David Togut, an analyst at CS First Boston Group, Inc. in New York, said the disaster-recovery market has shown 20% gains in the last couple of quarters, with stabilized prices and an outlook that remains strong.

"Companies now realize they need recovery plans and are increasingly contracting out," he said. "It is very expensive to provide these services in-house. Sungard has economies of scale that enable it to provide disaster-recovery services less expensively than an internal MIS department."

Accordingly, both analysts rated the stock a Buy. McClellan said that while Sungard's stock "hasn't done well, it's poised to do well because it's awfully cheap and the company is showing strong earnings growth."

— Tim Ouellette

Sungard Data Systems (SNDT)



EARNINGS PER SHARE	
1993	$1.91
1994*	$2.20
1995*	$2.55

*Estimate

Source: Merrill Lynch Equity Research, San Francisco

Exch	52-Week Range		Aug 5 1994	Wk Net Chg	Wk Pct Chg
Communications and Data Networks					UP 1.47%
OTC	63.75	21.38	3COM CORP.	50.38	2.00	3.8
NYS	65.50	36.25	AMERITECH CORP.	38.88	0.00	0.0
NYS	63.63	48.50	AT&T	54.11	-0.38	-0.7
OTC	26.50	12.75	BANYAN SYSTEMS INC	15.38	0.13	0.8
NYS	69.13	48.00	BELL ATLANTIC CORP.	57.88	0.75	1.3
NYS	63.88	53.00	BELLSOUTH CORP.	61.75	-0.75	-1.2
NYS	21.50	9.38	BOLT, BERANEK & NEWMAN	12.50	2.25	22.0
OTC	15.75	9.00	BROOKTROUT TECHNOLOGY	10.25	-0.25	2.4
NYS	132.50	82.63	CABLETRON SYSTEMS.	96.13	-6.00	-5.9
OTC	63.00	10.00	CENTIGRAM COMMUNICATIONS.	13.00	0.75	6.1
OTC	60.75	33.50	CHIPCOM CORP.	46.75	2.25	-4.6
OTC	40.75	28.75	CISCO SYSTEMS INC	29.75	0.13	0.6
OTC	16.38	8.75	COMPRESSION LABS INC	50.25	0.25	2.4
OTC	12.38	9.13	COMPUTER NETWORK TECH	6.75	1.38	25.6
OTC	13.75	8.50	CROSSCOMM	9.00	3.13	51.3
OTC	3.13	1.50	DATA SWITCH CORP	2.25	-0.19	7.7
OTC	36.50	17.00	DSC COMMUNICATIONS	29.06	1.19	-4.0
NYS	19.00	9.25	GENERAL DATACOMM INDS. (H)	17.21	0.75	4.5
NYS	39.00	29.50	GTE CORP	32.38	0.50	1.2
NYS	96.97	78.63	ITT CORP	86.19	-0.25	-0.3
OTC	29.63	21.38	MCI COMMUNICATIONS CORP	23.38	0.63	2.7
OTC	7.75	1.50	MICROCOM INC	6.38	-0.38	-5.6
OTC	23.50	11.25	NETMANAGE INC	10.00	1.00	7.1
OTC	7.25	3.75	NETRA CORP	5.00	0.50	11.1
OTC	8.75	3.50	NETWORK COMPUTING DEVICES	3.75	0.00	0.0
NYS	11.13	7.00	NETWORK EQUIPMENT TECH	9.88	0.63	6.8
OTC	23.38	11.13	NETWORK GENERAL	15.75	-0.38	-3.1
OTC	9.63	6.38	NETWORK SYSTEMS CORP	7.50	0.63	9.1
OTC	29.88	26.50	NEWBRIDGE NETWORKS CORP	29.25	-13.75	31.0
NYS	33.25	23.38	NORTHERN TELECOM LTD.	32.88	0.25	2.3
OTC	24.63	14.00	NOVELL INC	15.88	-0.50	-3.1
NYS	48.88	33.25	NYNEX CORP	39.43	1.00	2.6
OTC.	30.00	15.50	OCTEL COMMUNICATIONS CORP	20.50	1.50	7.9
OTC	18.75	9.00	OPTICAL DATA SYSTEMS INC.	15.25	0.13	-1.0
OTC	7.50	3.13	PENRIL DATA COMM NETWORKS	3.50	-0.50	-12.0
OTC	20.75	10.00	PICTURETEL CORP.	14.00	1.38	10.9
OTC	8.25	2.75	PROTEON INC.	2.75	-0.13	-4.3
OTC	14.38	2.75	RACOTEK INC.	6.50	1.13	19.9
NYS	38.88	24.88	SCIENTIFIC ATLANTA INC	38.63	3.63	10.6
NYS	67.00	36.75	SOUTHWESTERN BELL CORP	47.00	0.00	0.0
NYS	40.25	31.38	SPRINT CORP.	37.25	1.13	3.1
OTC	26.75	13.38	STANDARD MICROSYSTEMS CORP.	15.88	0.88	5.8
OTC	13.25	11.50	STORATACK INC (H)	11.13	0.38	1.2
OTC	33.75	13.50	SYNOPTICS COMMUNICATIONS	13.75	-0.38	-2.2
OTC	15.25	3.88	TELEBIT CORP	4.75	0.00	0.0
OTC	46.00	21.00	US ROBOTICS	26.50	-0.13	-0.5
NYS	50.75	38.25	US WEST INC	40.38	0.63	-1.5
OTC	13.88	10.75	WELLFLEET COMMUNICATIONS	19.63	-0.25	-1.3
OTC	28.25	12.25	XIRCOM	16.75	0.63	3.9
OTC	21.00	12.75	XYLOGICS INC	17.25	0.00	0.0
OTC	30.00	11.25	XYPLEX INC	16.25	0.50	3.2
PCs and Workstations						UP 3.22%
OTC	7.50	2.63	ADVANCED LOGIC RESEARCH	4.00	0.00	0.0
OTC	38.50	22.00	APPLE COMPUTER INC.	33.00	-0.38	-1.1
OTC	33.00	12.50	AST RESEARCH INC.	15.69	0.81	5.5
NYS	39.00	16.91	COMPAQ COMPUTER CORP	33.00	1.50	4.8
OTC	30.75	15.11	DELL COMPUTER CORP	28.75	0.00	0.0
OTC	25.00	9.25	GATEWAY 2000 INC	14.00	0.00	0.0
NYS	93.63	64.38	HEWLETT PACKARD CO.	79.88	2.63	3.4
NYS	26.88	16.00	SILICON GRAPHICS	23.50	0.13	0.5
OTC	31.38	18.25	SUN MICROSYSTEMS INC.	23.00	0.75	3.3
NYS	38.75	28.13	TANDY CORP	38.63	1.11	3.0
OTC	5.13	2.50	ZEOS INTERNATIONAL LTD	3.69	0.30	10.0
Large Systems						UP 0.40%
ASE	7.88	0.38	AMDAHL CORP	6.88	0.00	0.0
NYS	7.63	3.63	CONVEX COMPUTER	5.63	0.13	2.3
OTC	4.50	0.50	CRAY COMPUTER	1.38	-0.06	-4.3
NYS	33.75	19.13	CRAY RESEARCH INC.	20.88	0.38	1.8
NYS	30.75	6.63	DATA GENERAL CORP	7.88	-0.13	-1.6
NYS	63.13	18.25	DIGITAL EQUIPMENT CORP	20.75	0.75	3.8
OTC	6.38	2.38	EMULEX COMPUTER CORP	4.25	0.00	0.0
NYS	53.25	39.63	HARRIS CORP	40.63	0.00	0.0
NYS	65.00	40.63	IBM	62.50	0.63	1.0
OTC	10.75	7.75	NETFRAME	8.50	-0.75	-8.1
OTC	26.00	3.88	PARALLAN COMPUTER	4.00	0.00	0.0
OTC	23.25	5.38	PYRAMID TECHNOLOGY	8.25	0.25	4.2
OTC	20.00	13.13	SEQUENT COMPUTER SYS.	15.50	1.63	12.7
OTC	6.86	3.25	SEQUOIA SYSTEMS INC.	3.94	0.31	8.8
NYS	35.00	20.25	STRATUS COMPUTER INC. (H)	34.88	1.25	3.7
NYS	16.38	8.50	TANDEM COMPUTERS INC	13.88	0.00	0.0
OTC	30.00	3.88	TRICORD SYSTEMS (L)	4.50	0.38	9.1
NYS	16.50	8.63	UNISYS CORP.	8.25	0.00	0.0
Software						UP 1.11%
OTC	34.50	16.25	ADOBE SYSTEMS INC	29.00	1.50	4.9
OTC	34.50	16.25	ALDUS CORP.	28.63	1.63	-5.4
OTC	8.38	2.38	AMERICAN SOFTWARE INC.	5.13	0.38	7.9
OTC	11.75	6.75	ASK COMPUTER SYSTEMS	13.00	-0.25	-1.9
OTC	61.25	37.00	AUTODESK INC.	51.75	1.69	-3.1
OTC	4.25	1.75	BACHMAN INFO. SYSTEMS	1.88	0.13	7.3
OTC	33.00	20.50	BGS SYSTEMS INC	25.25	1.00	4.1
OTC	71.00	40.50	BMC SOFTWARE INC.	46.25	2.00	-4.1
OTC	30.75	22.50	BOOLE & BABBAGE	27.13	0.00	0.0
OTC	20.75	8.50	BORLAND INT'L INC.	12.75	1.25	10.9
OTC	25.00	6.75	BROKER CONTROL SYSTEMS INC.	7.88	-0.63	7.4
OTC	4.63	2.38	CE SOFTWARE	3.00	0.25	9.1
ASE	30.34	6.25	CHEYENNE SOFTWARE INC.	9.00	0.63	7.5
OTC	14.25	7.38	COGNOS INC	11.38	0.00	0.0
NYS	44.88	27.38	COMPUTER ASSOCIATES	38.38	-0.75	1.0
NYS	5.38	2.13	COMPUTERVISION CORP	2.88	0.13	4.5
OTC	48.25	31.88	COMPUWARE CORP	39.75	0.25	0.6
OTC	14.00	7.50	CONSUMAT INC	9.50	1.00	-9.5
OTC	25.00	9.19	COREL CORP	10.25	-0.63	-3.2
OTC	7.00	3.00	EASEL CORP	3.50	0.50	16.7
OTC	29.75	12.00	FAXNET CORP	18.25	0.25	1.4
OTC	25.00	3.00	4TH DIMENSION	6.75	3.63	116.0
OTC	13.50	7.25	FORME TECHNOLOGY	10.25	0.25	2.5
OTC	13.00	7.00	GROUP 1 SOFTWARE	7.75	0.50	6.0
OTC	31.75	6.25	GUPTA	11.00	-0.50	-4.0
OTC	12.00	5.88	HOGAN SYSTEMS INC.	7.88	-0.38	-4.8
OTC	29.50	16.00	IMRS	25.75	-0.25	2.9
OTC	44.75	12.38	INFORMATION RESOURCES	12.38	-0.63	-4.8
OTC	34.50	18.25	INFORMIX CORP	19.63	-0.88	-4.3
OTC	12.38	8.50	INTERGRAPH CORP	9.50	-0.25	2.6
OTC	8.25	2.50	INTERLEAF INC (L)	3.88	0.13	4.3
OTC	15.50	5.13	INTERSOLV INC.	12.38	1.25	11.2
OTC	50.00	27.00	INTUIT INC.	35.13	-0.88	-2.4
OTC	18.75	2.25	KNOWLEDGEWARE INC	6.38	1.69	69.9
OTC	34.25	17.50	LEGATO CORP	24.00	0.25	1.3
OTC	86.50	28.75	LOTUS DEVELOPMENT	33.50	1.25	3.5
OTC	18.00	8.25	MAGIC SOFTWARE ENTERPRISES	6.56	-0.44	-6.3
OTC	18.50	6.00	MANUGISTICS GROUP INC	8.00	-0.38	-4.3
OTC	7.50	1.25	MATHSOFT	2.50	0.63	33.3
OTC	11.25	4.50	MCHUGH ASSOCIATES	8.25	0.50	6.5
OTC	17.75	8.00	MENTOR GRAPHICS	10.00	0.00	0.0
OTC	30.25	11.50	MICRO FOCUS	15.63	1.00	6.8
OTC	11.00	4.63	MICROGRAFX INC (L)	5.25	0.63	13.5
OTC	54.75	35.74	MICROSOFT CORP. (H)	32.38	1.38	2.7
OTC	40.11	22.88	ORACLE CORP	37.00	-0.88	-2.3
OTC	30.75	21.50	PARAMETRIC TECHNOLOGY	28.75	0.50	2.0
OTC	24.50	13.38	PARCPLACE SYSTEMS INC	15.63	0.38	-2.4
OTC	43.38	26.00	PEOPLESOFT	35.00	0.13	0.4
OTC	6.25	3.50	PHOENIX TECHNOLOGIES	4.75	0.06	-1.3
OTC	60.50	24.75	POWERSOFT	38.63	4.88	15.2
OTC	10.75	3.50	PLATINUM SOFTWARE	8.50	0.00	0.0
OTC	16.13	7.25	PLATINUM TECHNOLOGY (H)	15.13	-0.25	-1.6
OTC	60.25	27.88	PROGRESS SOFTWARE CORP	38.75	-1.75	-4.4
OTC	9.13	1.94	QUARTERDECK OFFICE SYS.	7.38	0.91	11.0
OTC	13.00	11.50	RAINBOW TECHNOLOGIES INC	11.50	1.00	8.0
OTC	11.38	3.50	RASTEROPS (L)	5.75	0.13	2.2
OTC	14.50	2.88	ROSS SYSTEMS	4.38	0.13	2.9
OTC	28.25	3.00	SAPIENS INTL. CORP. N.V.	3.50	-0.50	12.5
OTC	16.63	9.25	SOFTKEY INTERNATIONAL INC	12.63	0.50	3.8
OTC	8.63	3.06	SOFTWARE PUBLISHING CORP	3.38	-0.63	-15.6
OTC	13.75	5.00	STATE OF THE ART	6.75	0.88	0.0
NYS	35.63	21.75	STERLING SOFTWARE INC	25.75	-4.25	14.2
OTC	21.50	6.88	STRATEGIC DYNAMICS RESEARCH	7.00	0.81	10.1
OTC	57.00	25.25	SYBASE INC	37.13	1.00	-4.9
OTC	20.38	9.88	SYBASTIC CORP	15.63	0.13	1.1
OTC	52.75	31.00	SYNOPSYS	38.13	2.38	-6.2
OTC	24.25	11.75	SYSTEM SOFTWARE ASSOC.	16.00	0.13	0.8
OTC	6.25	3.75	TOWNE CORP	5.75	0.00	0.0
OTC	30.00	11.25	VERBUT SYSTEMS	16.00	1.00	5.6
OTC	23.25	11.00	VMARK SOFTWARE INC.	18.25	0.13	0.7
OTC	13.25	5.50	WALKER INTERACTIVE SYSTEMS	7.13	0.13	1.8
OTC	40.00	24.25	WALL DATA INC	31.63	1.18	3.9
Semiconductors						UP 1.40%
NYS	32.75	16.75	ADVANCED MICRO DEVICES	16.50	0.19	1.8
NYS	31.25	19.38	ANALOG DEVICES INC.	20.38	1.75	9.0
OTC	29.63	10.94	BROOKTREE CORP	19.63	2.19	6.6
OTC	2.50	3.63	CHIPS AND TECHNOLOGIES	3.75	0.13	3.2
OTC	44.63	23.88	CIRRUS LOGIC	37.00	1.13	3.9
NYS	19.88	11.25	CYPRESS SEMICONDUCTOR CORP	16.75	-0.13	-0.7
NYS	20.13	13.00	DALLAS SEMICONDUCTOR	15.50	0.50	3.3
OTC	27.25	16.75	INTEGRATED SILICON SOLUTIONS	20.00	-0.88	-4.2
OTC	74.50	55.88	INTEL CORP	57.25	1.88	3.2
NYS	29.50	13.00	ISI LOGIC CORP	20.00	0.60	2.3
OTC	26.25	12.25	LATTICE SEMICONDUCTOR	18.25	-0.25	-1.0
NYS	40.50	35.38	MICROCHIP TECHNOLOGY	37.13	-0.25	-0.7
NYS	94.88	62.11	MOTOROLA INC.	72.50	0.75	0.5
NYS	25.00	14.38	NATIONAL SEMICONDUCTOR	17.75	0.88	5.2
OTC	10.13	6.75	SIERRA SEMICONDUCTOR	9.25	0.00	0.0
NYS	89.50	55.75	TEXAS INSTRUMENTS	76.75	0.00	0.0
OTC	10.00	9.38	VLSI TECHNOLOGY	13.13	1.13	7.9
OTC	14.38	3.13	WINTEK	3.13	-0.19	-5.8
ASE	20.38	0.63	WESTERN DIGITAL CORP	15.38	0.00	0.0
OTC	59.75	29.00	ZILOG	16.88	2.00	-5.4
OTC	40.75	26.50	ZYCAD INC.	27.00	-0.50	1.8
Peripherals and Subsystems						UP 1.44%
OTC	30.50	14.50	AMERICAN POWER CONVERSION	15.50	0.75	4.8
OTC	24.25	17.75	BANCTEC INC.	19.75	-0.25	1.4
OTC	7.75	3.25	CABLETRON CORP	4.00	0.29	5.8
ASE	7.38	1.00	COGNITRONICS CORP	1.94	0.06	3.1
NYS	20.50	9.00	COMPUTER PERIPHERALS	11.75	-0.38	-3.2
OTC	24.00	8.75	CREATIVE TECHNOLOGIES INC.	19.88	1.25	9.0
OTC	15.25	4.25	DATA GAGE INC. (L)	4.75	0.44	9.3
ASE	10.75	6.13	DATARAM CORP	6.13	0.38	7.6
NYS	13.00	12.38	EMC CORP	12.75	-0.75	-5.8
OTC	8.75	3.13	EMULEX CORP	7.38	0.00	0.0
OTC	21.00	11.25	EVANS & SUTHERLAND (L)	12.50	0.75	6.4
OTC	22.50	8.38	EXABYTE	15.38	-0.13	0.8
OTC	34.00	2.63	INTELLIGENT INFO SYSTEMS	4.00	0.91	35.5
OTC	4.38	2.00	IOMEGA CORP	2.44	-0.06	-2.5
OTC	8.75	3.00	IPL SYSTEMS INC. (L)	3.75	-0.13	3.7
OTC	28.50	13.75	KOMAG INC.	20.25	1.25	5.9
OTC	6.63	2.75	MAXTOR CORP	4.25	-0.38	-8.1
OTC	8.25	4.88	MICROPOLIS CORP	6.00	0.38	6.7
OTC	22.50	10.00	PLASMAT? MCAUD INC	13.50	2.88	17.6
OTC	14.75	4.25	PRINTRONIX INC.	11.50	0.25	1.9
NYS	11.75	6.88	QMS INC.	8.88	0.25	2.9
OTC	20.25	9.38	QUANTUM CORP	16.11	-0.19	1.1
OTC	9.13	3.63	RADIUS INC	5.00	0.61	14.3
NYS	17.71	7.63	RECOGNITION EQUIPMENT	7.81	0.00	0.0
OTC	6.88	3.63	REXON INC.	4.25	-0.50	0.5
OTC	28.25	16.25	SEAGATE TECHNOLOGY	25.00	-1.25	4.8
NYS	41.50	13.25	STORAGE TECHNOLOGY	17.75	0.75	7.8
NYS	11.38	21.38	TEKTRONIX INC.	38.38	-1.00	3.2
NYS	104.88	69.88	XEROX CORP	101.88	-0.88	-0.9
Services						UP 0.91%
OTC	26.75	15.13	AMERICAN MGMT SYSTEMS (H)	26.75	1.81	8.1
NYS	4.25	2.50	ANACOMP INC (L)	2.63	0.00	0.0
OTC	23.50	14.50	ANALYSTS INT'L	19.50	-0.25	1.7
NYS	56.88	47.63	AUTO DATA PROCESSING	52.38	1.00	1.9
OTC	18.25	10.75	CAMBRIDGE TECH. PARTNERS	14.50	1.00	-6.5
NYS	27.13	19.88	COMDISCO CORP	26.25	0.25	2.5
NYS	24.38	14.75	COMPUSERVE INC.	20.50	1.06	5.1
OTC	12.50	5.60	COMPUTER HORIZONS	10.00	1.25	-11.1
NYS	65.25	28.84	COMPUTER SCIENCES	41.25	-0.50	-1.2
NYS	9.75	6.00	COMPUTED TASK GROUP	8.25	0.00	0.0
NYS	12.38	0.25	COMPUSA INC	8.25	-0.38	-4.1
OTC	13.50	6.38	CONTROL DATA SYSTEMS INC	7.88	0.13	-1.8
OTC	11.00	9.13	EDGEHEAD DISCOUNT SOFTWARE	4.61	0.19	1.9
NYS	38.00	26.50	GENERAL MOTORS E (EDS)	35.00	0.25	0.7
OTC	22.75	7.75	IMACON CORP	8.25	0.63	7.7
OTC	28.00	13.63	INTELLIGENT ELECTRONICS	18.31	-0.31	-1.1
OTC	22.50	7.00	MENTOR	8.88	1.63	27.9
NYS	32.50	9.75	MICROAUDIT INC.	10.63	0.88	9.0
OTC	40.50	28.50	PAYCHEX	31.25	0.25	0.7
NYS	19.75	11.63	POLICY MANAGEMENT SYS	11.88	0.75	-6.7
NYS	25.38	18.63	REYNOLDS AND REYNOLDS	24.63	0.00	0.0
OTC	38.50	16.25	SEI CORP	28.13	0.63	2.2
OTC	29.38	20.38	SHARED MEDICAL SYSTEMS	24.63	0.50	2.1
OTC	11.00	5.06	SNC SYSTEMHOUSE (L)	5.00	-0.00	0.0
OTC	26.50	9.75	SOFTWARE SPECTRUM INC.	13.25	0.25	2.9
OTC	42.75	31.50	SUNGARD DATA SYSTEMS	35.00	0.50	1.4

KEY (H) = NEW ANNUAL HIGH REACHED IN PERIOD (L) = NEW ANNUAL LOW REACHED IN PERIOD

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intel inside pentium processor

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IBM recasts servers

CONTINUED FROM PAGE 1

This latest sign of IBM's ongoing reorganization reflects Chairman Louis V. Gerstner's move to recentralize the business units that flew further apart under former CEO John Akers (see story at right). The near-term payoff is supposed to be reduced costs for IBM through less duplication of effort.

"What IBM is trying to do is maximize its investment on technology," said Joseph Correira, vice president of applied technology at Travelers Insurance Co. in Hartford. "The key thing is to be able to take your R&D investment and divide that by a common denominator. That will hopefully reduce the cost of computing across their entire computer line."

But Correira said he expects it will take nine to 18 months before users will see savings from IBM's move to shared hardware.

Maintaining identity

IBM said its new Systems Technology and Architecture (STA) division, based in Austin, Texas, will develop common components and subsystems for a variety of servers, including the AS/400, RS/6000 and ES/9000 lines. IBM officials emphasized that unifying server development at the hardware level would not eliminate the separate identities of those products.

"We don't intend to make one unique, homogeneous line of products," said John M. Thompson, senior vice president and the group executive coordinating IBM's server strategy. "We think the market is big enough and wants different characteristics from multiple brands."

The change to common technology in servers is needed as hardware becomes more of a commodity, said James Matsey, corporate director of IS at Reynolds Metals Co. in Richmond, Va. "That whole chip area is very competitive, and what tends to be more important to us is the software anyway," Matsey said.

Try and try again

IBM once tried to link its different server systems through software with the failed IBM Systems Application Architecture project of the late 1980s. It will still try to link servers through common software modules from the Workplace OS group in Austin, said STA general manager Phil Hester, who developed scalable servers as a manager at IBM's RS/6000 division.

Despite its promise of more unified systems, IBM's road to reorganization is proving humpy at best. For example, the formation of the IBM PC Co. two years ago won praise for its initial successes but fell short of addressing the needs of both IBM and customers.

"IBM took the first steps they had to take and then stopped," said Leslie Fiering, an analyst at Gartner Group, Inc. in Santa Clara, Calif. "They didn't realize they had to remain agile and keep reinventing themselves."

One recurrent question is whether IBM can revitalize itself without wholesale body replacement at the top. For instance, one source inside the PC Co. complained that "some of the people who are responsible for the problems are still here and still in power."

Senior editor Craig Stedman contributed to this article.

A house divided

IBM Chairman Louis V. Gerstner is betting his restructuring strategy on the premise that the center will hold. Last week's formation of a unit to develop common hardware for the company's servers is the latest step to recentralize IBM and use less technology to do more things.

The move to knit IBM into a whole, rather than the sum of its parts, began last fall when Gerstner reversed predecessor John Akers' plan to turn IBM into a holding company for a group of mostly autonomous "Baby Blues" — a plan some praised but many did not.

Since then, Gerstner has done away with the whole "line-of-business" concept, recasting all of IBM's operations as divisions. He has put all server activities under a single executive, formed a cross-platform unit to develop the key Workplace software technology and pulled the IBM PC Co. back into corporate orbit. In addition, the use of common technology has become a companywide mantra for cost-cutting.

Gerstner's revisionist approach is drawing much praise from users and analysts. "Even though he got a lot of bad press on the 'vision thing,' he did have a vision, and now you're starting to see him execute on that," said Sam Albert, a consultant based in Scarsdale, N.Y.

IBM's Gerstner: Uniting server development will cut costs

But Joseph Correira, vice president of applied technology at Travelers Insurance Co. in Hartford, Conn., said IBM's drib-and-drab method of restructuring "can appear somewhat disjointed" from the outside. "It may be time to change the ocular of the vision to give us a little closer detail on where they're going," he said.

—Craig Stedman

Notes

CONTINUED FROM PAGE 1

otherwise enthusiastic Notes site Timberland Co. in Hampton, N.H. Plans for a joint CC:Mail/Notes backbone and uniform client should help, she said.

In fact, the planned fixes, if effective, would go a long way toward soothing user concerns about the current version of Notes, said Gary Clare, president of the Worldwide Association of Lotus Notes Users and Technologists. However, there is some skepticism.

Two Notes users who attended the symposium, but who asked not to be identified, agreed that it sounds great but said Lotus has had trouble meeting its targets in the past.

"Notes performance is not great, and Lotus does not have a reputation for delivering 99% uptime, which is a must for large Notes installations," added Clare, who is also director of technology competency at Coopers & Lybrand, a New York accounting firm and one of the largest Notes sites.

The competition

Lotus' plans trail the latest round of claims from Microsoft Corp., which says it will deliver a "Notes-killer" enterprise messaging/groupware server early next year.

"Sounds like having Microsoft breathing down their back is not a bad thing," said Judith Hurwitz, president of Hurwitz Consulting Group, Inc. in Watertown, Mass. For Notes to become the strategic system Lotus says it is, "the management pieces have to be there and their delivery has to be crisp, or Microsoft has the potential to walk away with their market," she said.

Although Lotus shipped Notes for Sun Microsystems, Inc.'s Solaris 1.1 operating system in February, it has not delivered other Unix versions it promised to ship more than a year ago.

During a session last week, Jon Melamut, a Notes sales support manager, said Notes 3.1.5 servers for The Santa Cruz Operation's SCO Unix, Sun's Solaris 2.3 and Hewlett-Packard Co.'s HP/UX are all in beta testing now. They will ship at the beginning of October. Notes for IBM's AIX will enter beta testing next week and will ship in early November. Notes clients for Unix will ship simultaneously with the server pieces, he said.

"There is a lot of anticipation out there for Unix versions of Notes because there is an expectation among users that Unix is more mature and will give Notes a performance boost and greater reliability" over the OS/2 server version of Notes in use at most user sites, Clare said.

Also on the Notes 3.1.5 front, in October Lotus will ship a Novell, Inc. NetWare Loadable Module server for NetWare 4.01 and 4.02, Melamut said. Notes will ship for NT Advanced Server 3.1 "very soon," he said, but not for NT Advanced Server 3.5, a souped-up server operating system — also known as Daytona — that is expected to ship in late September.

Key plans for the back-end portion of Notes 4.0 include the following:

- A server error-monitoring and trend-analysis tool that will use proprietary Notes technology to capture server status, replication and mail information within Notes networks. Also, a new Notes application programming interface will allow third-party Simple Network Management Protocol-based tools to monitor Notes servers.
- Modules that snap in the Lotus Communications Server (LCS) X.400 messaging transport backbone, which was announced last September. LCS is meant to help users better integrate Notes and CC:Mail.
- Pass-through dialing to allow remote users to access databases stored on multiple servers by dialing into just one. Today, users have to redial to access databases scattered across multiple servers.

The client-side update for Notes 4.0 will include the following:

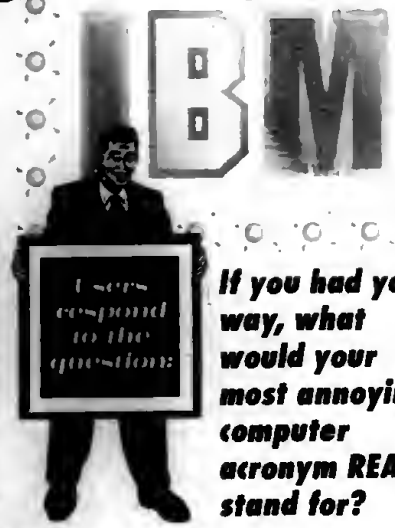
- A less cluttered user interface with context-sensitive menus that show users only commands that apply to the function they are using
- A feature that lets mobile users select a number of databases to upload and download in one shot, rather than separately
- Agents that can search and retrieve information automatically from on-line services and mail in-boxes
- OLE 2.0 support so users can edit objects in Notes that were created in other applications from within Notes

Not included

Lotus does not plan to increase the 1G-byte database size limit, Melamut said. Also missing from the plans are details on how easy it will be for users to migrate from Notes 3.x to Notes 4.0. Users said migrating from Notes 2.x to Notes 3.x was a nightmare, Clare said.

Also on the Lotus agenda is a fourth-quarter release of a version of its Notes imaging software, which will enable users to store space-hungry images on a separate server and exchange information between the image servers less often than regular Notes servers. Additionally, a video Notes server will go into beta testing in the early fourth quarter and ship in early 1995. Over time, the video server will become Notes' object store, Melamut said.

Wysiwyg



If you had your way, what would your most annoying computer acronym REALLY stand for?

AND MORE PREPOSTEROUS USER REQUESTS

"One of our engineers wanted to know if we could access our voice mail system and transfer the messages to a text file on the LAN. He didn't want to have to write everything down. We voted this the most preposterous request, and [voted him] the most lazy engineer."
Anonymous

"One of my users asked me the other day if there was any way I could SLOW his computer down! The problem was that the screen was scrolling too quickly when he was trying to mouse-select cells in Excel 5.0."
Oliver T. Grimwold
Pittsburgh Tag Systems,
Pittsburgh

IBM

Inadequate But Marketable
I've Been Misled
Incomprehensibly Big Marketshare
Matt Hall, head of development
! Productions, Fort Lauderdale, Fla.

PCMCIA

People Can't Memorize Computer Industry Acronyms
Submitted by innumerable computer users, which says it all

WYSIWYG

When You Say It Watch Your (friends) Giggle
Michael Smith, Programmer/Analyst
Wheeling Jesuit College, Wheeling, W. Va.

WYSIWYG compiled by Tim Ouelette
Illustration and design by Dave Marshall.

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Inside Lines

Peace and Love, Internet-style

The Age of Aquarius will meet the Information Age this weekend at the 25th Anniversary Woodstock celebration. Northern California's The Well, one of the oldest Internet access providers, is setting up the Woodstock '94 Internet Multimedia Center to bring together attendees at Woodstock and the rest of the on-line world. Running on servers supplied by Sun Microsystems and viewable on large projection screens, The Well's Internet conference will be inside the Mind Expansion Village and will be open to everyone at the celebration. To reach the Woodstock site, connect to URL http://www.well.com/woodstock or telnet well.com and log in as a guest.

IBM PC prices to drop by up to 15%

The IBM PC Co. will reduce prices by up to 15% this week on some popular low-end and midrange desktops, according to sources close to the company. Prices will drop immediately on old PS/2 56 and 57 models as well as the PS/2 76 and 77 models, upgrades for which were announced recently. A PS/2 77, priced at $3,435, will now start shipping at $2,885, according to the sources.

Giving Sun the gate (array)

After more than 10 years at Sun, Curt Wozniak, marketing vice president at Sun Microsystems Computer Corp., is moving on. The 39-year-old Wozniak will become president and chief operating officer at Xilinx, a San Jose, Calif., maker of programmable gate arrays. For now, three vice presidents at the Sun hardware division will divvy up Wozniak's responsibilities, he said last week. Although he officially departed Friday, Wozniak will still be hockey buddies with Sun CEO Scott McNealy. The fellow Detroiters play amateur hockey for the San Jose-based Leafs.

Mystery guest

Who's buying Rdb, Digital's relational database manager? That's what Bill McGrath, among others, wants to know. McGrath's company, Tolly Management, is hosting a conference Oct. 10-12 in Washington to coincide with the Rdb "pass-off," he said. Although he worked with Digital to time the conference, "we can't get any commitment" as to the buyer, McGrath said. He said he plans to open the conference with an Rdb representative from Digital and close it with "a mystery man" from the new owner. Meanwhile, many observers are pointing to Oracle and Computer Associates as potential buyers.

Advice for a price

IBM's client/server computing unit has put together a database that includes examples of client/server installations, a design tool kit and a survey for measuring potential customers against the results of a client/server study the company completed recently [CW, June 27]. However, the Client/Server Adviser System is being used as an internal support tool for IBM sales and consulting employees, rather than something that users can plug in to on their own. Customers will be able to access an undefined "subset" of the database but only to sneak a peek before signing on the dotted line, according to a user briefed on the project.

On American Public Radio's Marketplace program, they were rambling along through letters to the editor and came across one from a Microsoft employee, evidently in response to stories about the recent Justice Department settlement. The employee cited an eerie bumper sticker he'd seen that read, "We are Microsoft. Resistance is futile. We will assimilate." Now we can't shake the Star Trekkian vision of Bill Gates as leader of the Borg out of our minds. . . . But if you have any news tips to shake up, do get in touch with Computerworld *through our 24-hour voice-mail tip line at (508) 820-8555 or our toll-free number at (800) 343-6474. News editor Maryfran Johnson can be reached by phone at (508) 820-8179, via the Internet at mjohnson@cw.com or through MCI Mail at 590-8017.*

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We'll let Bill Blaustein, a Principal of the Government Services Practice, tell the story:

"It's so incredibly easy, we are now able to do it in our spare time.

"KPMG Peat Marwick has long been the dominant vendor in the government market. In fact, we introduced FAMIS to our clients in the early 1970's, when many were IBM mainframe customers.

BILL BLAUSTEIN

"But technology changes. And by 1992, we found ourselves faced with the unfortunate reality that our product was linked to a technology that was highly proprietary and not at all cost effective.

"Of various companies in the CICS downsizing business, UniKix Technologies was the only vendor who could move source code without having to change or re-write it. We checked their references and found that they were every bit as good as we thought, and great with service and support.

KPMG

"The results were that in two weeks, without any prior UNIX or UniKix experience, we moved 300 programs from the mainframe to a UNIX environment without a single code modification.

"We were able to immediately begin selling the product in this new configuration. In fact, we promptly sold an existing client who otherwise would have become an ex-client. And we are now able to participate in bids that we had to pass up before.

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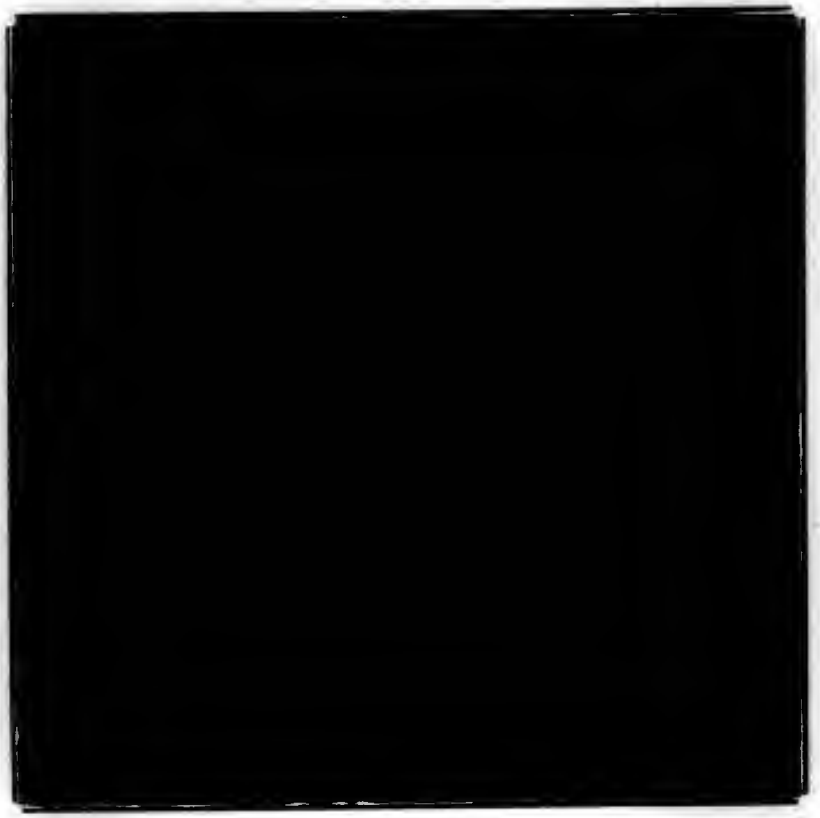

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